NTH Consultants, Ltd.
Infrastructure Engineering
and Environmental Services

1430 Monroe Avenue NW
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Grand Rapids, MI 49505
616.957.3690
616.575.1000 Fax

Michigan Department of Environmental Quality
Attention: Mr. Brian Coles
350 Ottawa Avenue NW, Unit 10
Grand Rapids, Michigan 49503

July 29, 2011
NTH Project No. 74-090095-14

RE: Closure Report
Facility ID: 00042271
Railway Express Agency
47 Williams Street, SW
Grand Rapids, Michigan 49503

Dear Mr. Coles:

NTH Consultants, Ltd. (NTH) was retained by Mel Trotter Ministries (Mel Trotter) to conduct additional investigation activities for the Leaking Underground Storage Tank (LUST) site at 47 Williams Street SW, Grand Rapids, Kent County, Michigan (subject site).

Mel Trotter acquired the property in 2004. Prior to acquisition a Phase I Environmental Site Assessment was performed on behalf of Mel Trotter and no recognized environmental concerns were identified. At no time did Mel Trotter own or operate any petroleum dispensing or storage system at the subject site. The underground storage tanks (USTs) were identified by utility workers who found two pipes that led to the tanks at the building. Mel Trotter has voluntarily removed the USTs, conducted an Interim Assessment Report, excavated/disposed of 8 cubic yards of contaminated soil, and completed the attached Closure Report.

If you have any questions, please call.

Sincerely,

NTH Consultants, Ltd.

Garnet Johnson
Project Professional

Brain S. Smits, P.E.
Senior Vice President

GRJ/BSS/dlm

Attachments

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY – REMEDIATION & REDVELOPMENT DIVISION
PO BOX 30426, LANSING, MI 48909-7926, Phone 517-373-9837, Fax 517-373-2637, E-mail DEQ-STD-TANKS@michigan.gov

LEAKING UNDERGROUND STORAGE TANK CLOSURE REPORT

INSTRUCTIONS: COMPLETION OF THIS REPORT WITH ALL APPLICABLE INFORMATION IS MANDATORY. The Certified Underground Storage Tank Professional (CP) MUST sign below. **Failure to submit this report within the stated time period may result in administrative penalties as provided for in Part 213, Section 21313a of 1994 PA 451, as amended.** PLEASE RETURN THIS COMPLETED REPORT AND ASSOCIATED ATTACHMENTS TO THE APPROPRIATE RRD DISTRICT OFFICE. See form eqp4410 for a complete list of RRD district offices.

FACILITY NAME: Former Railway Express Agency Property	FACILITY ID NUMBER: 0004271
STREET ADDRESS: 47 Williams Street, SW	
CITY: Grand Rapids ZIP: 49503 COUNTY: Kent	
DATE(S) RELEASE DISCOVERED: July 27, 2010	CONFIRMED RELEASE NUMBER(S): C-0096-10
O/O NAME: Mel Trotter Ministries	
O/O STREET ADDRESS: 225 Commerce Avenue, SW	STATE: MI ZIP: 49503
CONTACT PERSON: Don VanderZee	PHONE NUMBER: 616-454-8249

ANSWER ALL QUESTIONS (DO NOT LEAVE BLANKS):

1. a. Has the UST been emptied? ☒YES ☐NO (If no, explain why):
   b. Has the UST system been properly closed? ☒YES ☐NO (If no, explain why):
2. Free product present: a. Currently? ☐YES ☒NO If YES, total gallons recovered since last report:
   b. Previously? ☐YES ☒NO If YES, total gallons recovered to date:
3. Have vapors been identified in any confined spaces (basement, sewers, etc.)? ☐YES ☒NO
4. State the number of homes where drinking water is or was affected as a result of a release from this facility: 0
5. Estimated distance and direction from point of release to nearest:
   a. Private well: >2,000 feet b. Municipal well: > 5 Miles c. Surface water/wetland: 2,000 feet
6. Since last report: a. cubic yards of soil remediated: 8 b. gallons of groundwater remediated:0
7. Totals to date: a. cubic yards of soil remediated: 8 b. gallons of groundwater remediated:2,300
8. Michigan RBCA Site Classification (1-4): 4 Previous RBCA Site Classification (1-4): 3
9. Has contamination migrated off-site above Tier 1 Residential RBSLs ☐YES ☒NO
   If YES, have off-site impacted parties been notified (per Section 21309a(3) of Part 213) ☐YES ☐NO
10. Is an institutional control required for contamination that has migrated or will migrate off-site? ☐YES ☒NO
11. MTBE — Has MTBE been detected in any groundwater sample? ☐YES ☒NO — Maximum concentration of MTBE found in ground water _____ ppb.

CERTIFICATION OF REPORT COMPLETION

I, the undersigned CP, hereby attest to the best of my knowledge and belief that the statements in this document and all attachments are true, accurate, and complete. I certify that the report was submitted to the Remediation & Redevelopment Division (RRD) on 8/1/2011 (Date submitted **REQUIRED**)

Brian Smits — 8/1/11
CP Original Signature - **(REQUIRED)** Date

Garnet Johnson
PRINT QC PROJECT MANAGER'S NAME

Brian S. Smits, P.E.
PRINT CP's Name

NTH Consultants, Ltd.
NAME OF CONSULTING FIRM

CP ID 321 QC ID: Z_00134

ADDRESS 1430 Monroe Ave., Grand Rapids, MI 49505 Suite 180 PHONE: 616-957-3690 FAX: 616-575-1000

CERTIFICATION OF CLOSURE

1. Type of RBCA Evaluation: ☒Tier 1 ☐Tier 2 ☐Tier 3
2. Closure report based on which type of land use?: ☒Residential ☐Commercial III ☐Commercial IV ☐Industrial
3. Institutional Controls: ☒None ☐Notice of Corrective Action ☐Restrictive Covenant ☐Other

I certify under penalty of law that corrective actions associated with the above referenced release at this facility were completed in accordance with Part 213, 1994 PA 451, as amended, and current departmental guidance and procedures available at the time the work was completed. I further certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

CP Signature - (REQUIRED) Brian Smits Date 8/1/11

Instructions - Utilize the following checklist to ensure that all required information is provided in the Closure Report. Include this checklist as the table of contents. The order in which the information is provided is at your discretion. Each page of the report (including the cover sheet, table of contents, appendices, figures, etc.) should be consecutively numbered. The location column should be completed with the appropriate page number for each item. You may reference previously submitted materials by specifying the location within that document. Maps, tables, figures, etc. should be combined as appropriate.

All information required by Part 213 to be included in the Closure Report **must** be provided, and all sections of the report must be completed. If any items are not applicable to the site, provide a justification regarding the absence of this information in the appropriate section of the report.

If an Initial Assessment Report (IAR) and/or a Final Assessment Report (FAR) have not been submitted for this release, provide all required information from the IAR and/or FAR not included below.

Section	Table of Contents	Page

2.5 TIERED EVALUATIONS AND CLEANUP GOALS

NOTE: If a Tier II evaluation was performed and described in the IAR or the FAR, explicitly indicate where different assumptions or site-specific information were used in this Tier II or Tier III evaluation and why the change was justified.

2.6 MODELING

2.7 NOTICES AND RESTRICTIONS

If the closure does not require the use of institutional controls to restrict land or resource use, then proceed to Section 2.8.

D. Describe any alternate mechanism utilized to restrict exposure to regulated substances as defined in Section 324.21310a(3), and justify how this mechanism reliably restricts exposure to the regulated substances. NA - 12

2.8 PERMITS

List all discharge permits and/or permit exemptions that were required for the corrective action, and include the type of permit, permit number, application date, approval date and termination date. NA - 12

2.9 CORRECTIVE ACTION PLAN

A. Summarize the corrective action activities that resulted in release closure. Include the operating history of any active treatment systems. 12-13

B. Summarize the types of monitoring activities performed, including the media and parameters monitored. 12-13

C. Attach performance monitoring data. 12-13

D. Describe and justify changes to the previously submitted Corrective Action Plan. 12-13

E. Provide the total volume of soil remediated, and include disposal location and proof of disposal (e.g., invoices, not load tickets) for all soils excavated subsequent to submittal of the last report, if appropriate. 12-13

F. Provide the total volume of groundwater actively remediated to date, and include disposal documentation, if appropriate. 12-13

3.0 CLOSURE VERIFICATION SAMPLING

3.1 SOIL CLOSURE VERIFICATION

NOTE: Verification sampling must be conducted whenever contaminated soils are identified but not remediated, including when contaminated soil is returned to an excavation after the removal of a UST.

A. Describe the soil verification sampling strategy applied at the site by providing the following:

1. A scaled site map which identifies the former extent of the soil contamination, and the soil verification sampling locations relative to existing site features. *(Multiple chemical contaminants and multiple sample depths should be addressed on the minimum number of site maps needed to convey the information with clarity and legibility.)* Fig 4–App A
2. For a corrective action involving excavation, a scaled drawing(s) showing the floor and walls of the excavation and the associated sampling locations. The drawing should also depict the subsurface stratigraphy, soil types, fractures, discolored soil locations, adjoining conduits or potential migration pathways, and locations of former and existing UST system components, as appropriate. Fig 4 and 5 App A
3. A description of how the number and location of samples collected for soil verification purposes was established. If your sampling strategy differs from the MDEQ *Verification of Soil Remediation Guidance Document* and Storage Tank Division Operational Memorandum No. 9, *Groundwater and Soil Closure Verification Guidance,* provide justification. 13
4. A list of the analytical parameters used to verify the soil remediation. 13

5. A justification if all soil verification samples were not analyzed, preserved, and handled in accordance with the Storage Tank Division Operational Memorandum No. 14 *Analytical Parameters and Methods, Sample Handling, and Preservation for Petroleum Releases.* — 13

B. Provide a table with laboratory data showing the results of all verification soil sampling performed to date for the required parameters. Refer to the Storage Tank Division Operational memorandum No. 14 *Analytical Parameters and Methods, Sample Handling, and Preservation for Petroleum Releases.* The table should include the following: — Appendix C

1. Sample ID
2. Sample depth
3. Date of collection
4. Dates of extraction and analysis
5. Method Detection Limits
6. Analytical method

(NOTE: The RRD may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)

C. Provide copies of all soil boring logs not previously submitted. — NA-13

3.2 GROUNDWATER CLOSURE VERIFICATION

A. Describe the groundwater verification sampling strategy applied at the site by providing the following:

1. A scaled site map which identifies the former extent of groundwater contamination, the groundwater verification sampling locations relative to existing site features, and the groundwater flow direction(s). *(Multiple chemical contaminants and multiple aquifer/sample depths should be addressed on the minimum number of site maps needed to convey the information with clarity and legibility.)* — 13
2. A description of how the sampling frequency and duration of sampling for groundwater verification purposes was established. If your sampling strategy differs from the Storage Tank Division Operational Memorandum No. 9. — 13
3. A list of the analytical parameters used to verify groundwater closure — 13
4. A justification if all groundwater verification samples were not analyzed, preserved, and handled in accordance with the Storage Tank Division Operational Memorandum No. 14 *Analytical Parameters and Methods, Sample Handling, and Preservation for Petroleum Releases.* — 13

B. Provide a table with laboratory data showing the results of all verification groundwater sampling performed to date for the required parameters. Refer to the Storage Tank Division Operational Memorandum No. 14 *Analytical Parameters and Methods, Sample Handling, and Preservation for Petroleum Releases.* The table should include the following: — Appendix E

1. Sample ID — Appendix E
2. Sampling depth or screened interval — Appendix E
3. Date of collection — Appendix E
4. Dates of extraction and analysis — Appendix E
5. Method Detection Limits — Appendix E
6. Analytical method — Appendix E

(NOTE: The RRD may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)

C. Attach copies of the following:

1. Boring logs not previously submitted. NA - 13
2. Well construction diagrams not previously submitted. NA - 13
3. Potentiometric surface maps for each groundwater verification sampling event. NA - 13
4. Elevation data (USGS datum preferred), including top-of-casing and grade elevations, and depth to groundwater for each groundwater verification sampling event. NA - 13

3.3 CLOSURE VERIFICATION FOR OTHER MEDIA

A. Describe the verification sampling strategy for other media applied at the site. NA - 13

B. Provide a scaled site map which identifies the verification sampling locations relative to existing site features and boundaries, if appropriate. NA - 13

C. Provide a table with the laboratory data showing the results of all verification sampling performed to date in the other specified environmental media. NA - 13

(NOTE: The RRD may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)

1.0 PROJECT CHRONOLOGY

Prior to acquisition of the Property in July 2004, the current owner, Mel Trotter Ministries, retained an environmental consultant to conduct a Phase I Environmental Assessment (ESA). The 2004 Phase I ESA did not identify any USTs on the Property and did not identify any recognized environmental conditions.

The abandoned underground storage tank (UST) system located at 47 Williams Street, SW was discovered during a street reconstruction project conducted by the City of Grand Rapids in the summer of 2010. A Site Location Map is included as Figure 1 and a Site Layout Plan is included as Figure 2 in Appendix A. The utilities identified in the area are depicted on Figure 3 in Appendix A. Two remote fill ports were identified by contractors near the curb line on the north side of Williams Street, SW. Additional investigations identified that the remote fill ports extended subsurfacely to two abandoned USTs. The USTs were discovered beneath a concrete floor slab in the southwestern portion of the commercial building located at 47 Williams Street, SW. Mel Trotter Ministries is the current owner of the Property. Historically, Railway Express Agency operated as an auto/truck rental facility at the Property and is suspected to be the last operator of the UST system.

Mel Trotter Ministries had no knowledge that the UST systems existed. After the discovery, however, the USTs were registered with the Michigan Department of Environmental Quality (MDEQ) by Mel Trotter Ministries. A Notice of Intent to Remove was submitted with the UST registration and registration fee to the MDEQ. The USTs were identified as "UST-W" and "UST-E". "UST-W" was a 2,500 gallon capacity cylindrical steel UST and "UST-E" was a 1,500 gallon capacity cylindrical steel UST. The location of the former UST system and components is included as Figure 3 in Appendix A. The MDEQ Facility Identification Number for this site is #00042271.

The product within the USTs was characterized through sampling/chemical analysis as leaded gasoline and water, but predominantly water. On July 8, 2010, Crystal Flash Energy of Grand Rapids, Michigan (Crystal Flash), evacuated and disposed of 1,800 gallons of product/water from the USTs. UST removal activities occurred on July 27 and July 28, 2010 under the supervision of Dixon Environmental Consulting, Inc. (Dixon). During the removal of the USTs, significant corrosion, pitting and holes were observed in both USTs. Perched groundwater conditions were observed within the excavation. Crystal Flash returned to the site and removed 500 gallons of ground-water from the excavation and residual water that had entered UST-W. A total of 2,300 gallons of liquid was removed from the USTs and the excavation. No free product was encountered.

A. Based on visual observations of the USTs, soil staining was observed at the base of the excavation, predominantly below the perched water line. In addition, petroleum odors were noted during the removal of the USTs. Based on olfactory and visual observations, a **Suspected Release** was reported to the MDEQ by Dixon on **July 28, 2010** at **11:54 a.m.** via facsimile transmittal. The Suspected Release was later upgraded to a **Confirmed Release** on August 3, 2010 after the chemical analysis of the UST Site Assessment Samples, collected by Dixon, were received. The Confirmed Release was reported to the MDEQ by Dixon via facsimile transmittal on **August 3, 2010** at **8:01 a.m.** The Confirmed Release number, assigned by the MDEQ, is #C-0096-10.

   Dixon supervised the UST removal activities on July 27 and 28, 2010. Following the removal of the USTs Dixon collected UST Site Assessment samples as indicated on Figure 4 of Appendix A and Table 1 of Appendix C. Based on the visual and olfactory evidence of a release, Dixon collected the samples to assess the conditions within the excavation. Saturated conditions still existed on the floor of the excavation at approximately 8 feet below ground surface (bgs); therefore, Dixon did not collect soil samples

from the floor. Prior to backfilling, Dixon collected perched groundwater samples, (UST-FS, USTE-FS and USTW-FS), from approximately 8 feet below ground surface within the excavation. Dixon also pumped and disposed 2,300 gallons of water to evacuate the excavation.

The analytical results of the UST assessment samples indicated contaminant concentrations exceeding residential cleanup criteria at the south and west walls of the UST excavation (soil samples) and at the floor of the excavation (water samples). Therefore, on November 2, 2010, Dixon conducted six soil borings to assess the horizontal and vertical extent of the release outside the limits of the UST excavation. Soil borings, SB-1 and SB-2, were conducted west of the UST excavation, outside of the building. Soil boring, SB-3, was conducted on the south side of Williams Street, SE, in a landscape bed. Soil boring, SB-4, was conducted within the former UST excavation pit and soil borings, SB-5 and SB-6, were conducted east and north of the UST excavation inside the building as indicated on Figure 4 and Table 2 of Appendix C.

Soil borings, SB-2, SB-4 and SB-6 were converted into permanent monitor wells, MW-2, MW-4 and MW-6, respectively. The monitor wells were screened within the shallow, perched, water bearing zone.

The results of these analyses (Table 2 and Table 4 of Appendix C) indicated that the lateral extent of soil contamination had been defined, and that the vertical extent of soil contamination had been defined by the SB-4 samples. However, impacted groundwater was still present at the bottom of the UST excavation (SB-4/MW-4).

Following this, NTH Consultants, Ltd (NTH) was retained by the City of Grand Rapids under an US EPA Site Assessment Grant to assist Mel Trotter Ministries with closure of the USTs.

NTH supervised additional soil excavation at the west and south sidewalls of the UST excavation. The additional excavation extended all the way to the building foundation on the south, and stopped just short of the building foundation on the west. Additional confirmatory soil samples were collected at the west wall of the excavation (SS-1 and SS-2 on Figure 4 and Table 1), but no soil remained at the south wall of the excavation.

Additionally, no groundwater was encountered in the excavation to a depth of 11 feet bgs. The west sidewall samples collected by NTH were at a depth of 10 to 11 feet bgs, to measure potential impacts from the previously contaminated water in the excavation.

B. An Initial Assessment Report (IAR) was submitted by Dixon on January 10, 2011. The IAR concluded limited soils impacts exist that exceed the Groundwater Contact Protection, Direct Contact and Soil Volatilization to Indoor Air Inhalation RBSLs. Dixon recommended additional soil borings to determine if additional soil excavation was feasible to remove the soils present above the applicable criteria.

C. A Final Assessment Report (FAR) has not been submitted.

D. No other reports have been submitted for this site.

2.0 SUMMARY OF CORRECTIVE ACTION ACTIVITIES PERFORMED

2.1 An IAR was submitted by Dixon on January 10, 2011.

2.2. Free Product has not been discovered/encountered at the site.

2.3 Site Assessment Activities; Summary of Final Assessment Report (FAR) information

A scaled area map with site boundaries in relation to the surrounding area, the nearest major roads, and location of nearby surface waters is included as Figure 2 in Appendix A. The site and surrounding area is serviced by municipal water and sewer services. A scaled map with the location of nearby underground utility lines is included as Figure 3 in Appendix A.

Based on information from the MDEQ website, there are no known nearby delineated well-head protection areas, or off-site wells (municipal, residential, production, irrigation, etc.) within two years groundwater travel time of the property line.

A scaled area map with fill ports, piping, and other pertinent system components for all known UST systems currently or formerly at the facility is included as Figure 3 in Appendix A.

The release is believed to have occurred from both USTs as holes and pitting were observed in both post removal.

The location of adjacent buildings, roadways, paved areas, or other structures are depicted on Figure 2 in Appendix A.

The location of all soil samples with associated analytical results are depicted on Figure 4 in Appendix A. Geologic Cross sections are provided on Figure 5 in Appendix A. Perched groundwater sample locations and corresponding analytical results are identified on Figure 6 in Appendix A. A Groundwater Flow Map is provided as Figure 7 in Appendix A.

The location of all on-site wells with screened intervals and perched groundwater sample results are depicted on Figure 6 in Appendix A.

Surface water, sediment and air samples were not collected as part of this investigation.

Cross sectional diagrams are provided at Figure 5 in Appendix A. Utility locations are included on the cross sections.

Additional site assessment activities were completed post IAR submittal as discussed in Section 1.0. Additional soil was excavated in the former UST area and additional soil remediation verification samples were collected.

The work plan submitted in the IAR was modified, as additional borings were not completed prior to the excavation activities. Instead, additional soil excavation and verification sampling was performed.

According to Dixon's IAR, the general lithology of the site included surface asphalt or concrete of varying thickness less than six inches across the entire site. A mix of miscellaneous sandy fill material consisting mostly of a brown, fine to medium sand was encountered from approximately six inches to 2 feet below ground surface. A historical excavation area of mostly sand and clay extended to approximately 8 feet

below ground surface. The historical excavation area existed predominantly within the southwestern portion of the building, just beyond the limits of the UST excavation. The sand/granular fill material transitioned with depth to recompacted (or consolidated) clay. Native dry clay existed deeper than 9 feet below ground surface within the UST excavation area and at various shallower depths outside the UST excavation area. The native clay extended to at least 34 feet below ground surface as evidenced by soil borings. A shallow, perched, water bearing zone existed at one time within the historical excavation area. The static elevation of the perched water table was approximately 4 feet below ground surface. However, this perched water was pumped and disposed during corrective action activities and did not return in the excavation. No other water bearing zones were encountered during the investigation.

Following submittal of the IAR, NTH Consultants, Ltd. (NTH) was retained under a United States Environmental Protection Agency Site Assessment Grant to perform additional assessment of the release. NTH retained an excavation contractor, JL Cook Construction (JL Cook), to excavate additional impacted soils at the south and west walls of the former UST area where Dixon's IAR indicated remaining contamination. NTH supervised the excavation and removal of soils. The soils encountered during the field activities were comprised of brown fine to medium sand to the bottom of the excavation at a depth of approximately 12 feet below ground surface. Black staining was observed along the western wall of the excavation from about 8 to 10.5 feet below ground surface. The visually stained soils were removed during the excavation activities and properly disposed. Confirmatory samples were collected, two along the western wall, for verification the impacted soils were removed. The soil sample analytical results, collected by NTH, did not indicate the presence of any indicator parameters, with the exception of total lead, which does not exceed the applicable criteria. No groundwater was encountered during the excavation activities.

Approximately 8 cubic yards of soil was removed from the site and trucked by JL Cook to the Ottawa County Landfill in Coopersville, Michigan. Refer to Appendix B for a copy of the manifest and load ticket from the soil disposal.

Appendix C includes tables with the laboratory data showing the results of all soil sampling performed to date for the required parameters. Figure 4 also depicts the soil analytical results. Note that Figure 4 and Table 2 include data from soils which were removed during the additional corrective action activities.

Appendix D includes a table which compares the maximum contaminant concentrations remaining to the appropriate RBSLs.

No soil boring/monitoring well installation activities were completed post the IAR submittal therefore, no additional logs are included at this time.

No known contamination exists on site not related to the release.

The perched groundwater was initially encountered in granular soils within the UST excavation between 4 to 5 feet below ground surface. After pumping and disposal of this water, no water returned to the UST excavation. Based on the soil boring results and observations during the UST removal, groundwater conditions appear to represent an isolated perched condition in the near surface granular soils. No deeper water bearing unit was encountered during the IAR investigation. A soil boring was advanced to a depth of 34 feet below ground surface near the southwestern exterior corner of the subject building (outside the limits of the UST excavation). A significant clay barrier (greater than 25 feet) was observed under the perched water bearing zone.

The perched groundwater condition observed during the subsurface investigation represents groundwater "not in an aquifer". Groundwater of any kind at the subject site and in the vicinity is not being used for a source of drinking water or for any other purpose.

The predominant soil type in the water-bearing stratum was miscellaneous fill sand and some recompacted clay, which is typical in a historically urban setting. The miscellaneous fill sand represents the water bearing media at this site. The porosity of the sand was not determined for the miscellaneous water-bearing fill sand.

The hydraulic conductivity was not determined for the miscellaneous water-bearing fill sand. The grain size of the sand consisted mostly of a fine to medium sand with some coarse sand.

A groundwater flow rate was not determined. The horizontal/lateral groundwater gradient was calculated at 0.008 feet per foot in a predominantly northerly direction. The observations were consistent with an isolated perched water condition. Figure 7 - Potentiometric Surface Map (12/29/10-calculated by Dixon) presents the data for visual review.

The reconsolidated and native clay surrounding the tank excavation contain and restrict the migration of the groundwater. The building foundation walls and footings set in clay also appear to further restrict the migration of the groundwater.

The impact appears limited to the UST excavation fill soils and the perched groundwater within the former UST excavation. Soil borings advanced into the significant clay unit below the UST excavation confirm that the clay unit is at least 34 feet deep, is dry (no water bearing zone) and is not impacted.

The Potentiometric Surface Map is included as Figure 7 - Potentiometric Surface Map (12/29/10).

The Soil Boring Logs and Monitor Well Construction Diagrams included in the IAR show the elevational measurements of the top-of-casing, approximate grade elevations and depth to water.

Groundwater remediation consisted of pumping and disposal of perched water originally in the UST excavation. It did not return.

Perched groundwater impacts detected by Dixon appeared limited to the UST area and do not appear to extend offsite.

Table 4 in Appendix E includes the perched groundwater sampling data results including Sample ID, Sample Depth, Date of Collection, Dates of Extraction and Analysis, Method Detection Limits and Analytical Methods. All samples shown on Table 4 were collected by Dixon for the IAR. All of the perched water was removed from the UST excavation. No water was encountered during subsequent excavation activities, completed in March 2011. The perched water removed from the UST excavation included the UST samples and MW-4. No other perched groundwater samples were collected that exceed the GRCC with the exception of dissolved lead at MW-2. The dissolved lead was re-sampled (with a lower turbidity) and dissolved lead was not detected, thereby refuting the lead detection.

The analytical data from the perched groundwater samples do not show any contaminants that exceed the RBSLs, therefore, a maximum remaining contaminant concentration table with respective RBSLs is not included.

Perched groundwater contamination appears related to the UST release. Additional groundwater

contamination was not encountered during this investigation. The subject site, however, exists within an urban setting where other perched groundwater plumes may exist. The lithology of the target area does not support that a significant water bearing unit exists less than 34 feet below ground surface.

The petroleum hydrocarbon perched groundwater contamination was only identified to exist within the UST excavation pit. A single lead concentration was reported in, MW-2, located west of the UST excavation that exceeded the Drinking Water Criteria. However, MW-2, was re-sampled, where the turbidity was reduced from the initial sampling event. MW-2 did not exhibit lead concentrations above the laboratory method detection limits for the re-sampling event.

No other media has been evaluated to determine if they have been impacted at the site.

2.4 Site Classification

Based on the Michigan Department of Environmental Quality Remediation Division (MDEQ-RD) Site Classification System (*RD Operational Memorandum No. 3 - Part 213 Leaking Underground Storage Tank (LUST) Site Classification System*), this site can currently be classified as **Class 4**.

The classification has changed since the submittal of the IAR. The site was classified as a 3 in the IAR.

This site now meets the definition of a Class 4 site because after additional corrective action activities, none of the remaining samples exceed the Generic Residential Cleanup Criteria (GRCC) outlined in the MDEQ Remediation Division Operational Memorandum No.1: Part 201 Cleanup Criteria and Part 213 Risk Based Screening Levels tables, tables last updated: March 25, 2011.

2.5 Tier Evaluations and Cleanup Goals
No Site-Specific Tier II or other evaluation has been conducted for this site.

2.6 Modeling
No modeling has been conducted for this site.

2.7 Notices and Restrictions
This closure does not require the use of institutional controls or restrict land use or resources.

2.8 Permits
No permits or permit exemptions were needed for the corrective action.

2.9 Corrective Action Plan
An additional excavation activity to remove the impacted soils from the former UST area was the corrective action which resulted in release closure. No treatment system was utilized.

No additional monitoring is necessary.

Instead of completing borings in an attempt to determine the vertical extent of the impacts, excavation and verification sampling activities were utilized.

No soil remediation activities were completed as part of the UST removal or IAR. Approximately 8 cubic yards of soil was removed post IAR activities.

No groundwater remediation was included as part of the closure activities as no water was encountered

during the corrective action excavation activities in March 2011.

3.0 CLOSURE VERIFICATION SAMPLING

3.1 Soil Closure Verification

Soil excavation was the corrective action used at the site. Initial soil excavation occurred in July 2010 during UST removal. Additional, soil excavation activities were completed in March 2011 to remove impacted soils identified along the western wall of the former UST excavation. The number of soil samples collected was established based on the location of the previous samples and their contaminant concentrations. The samples were collected to confirm the impacted soils were removed. The confirmatory samples indicate no evidence of remaining contamination along the western sidewall.

One soil sample from the UST excavation UST-EW (7.5') exceeded the GSI criteria, however, additional soil removal activities were unable to be completed in that area. There are sample points between UST-EW and the sensitive receptor (storm drain) so the UST-EW sample location is not considered a point of compliance. Therefore, this site qualifies for unrestricted residential closure. Scaled drawings of the excavation with the sampling locations and their corresponding analytical results can be found in Appendix A.

The parameters analyzed are the constituents outlined in Operational Memorandum 14, for leaded gasoline indicator parameters.

All samples collected by NTH were analyzed.

Refer to Appendix C for a copy of the tables summarizing the analytical results of the excavation activities.

No additional soil borings were completed; therefore, no additional soil boring logs are being submitted.

3.2 Groundwater Closure Verification

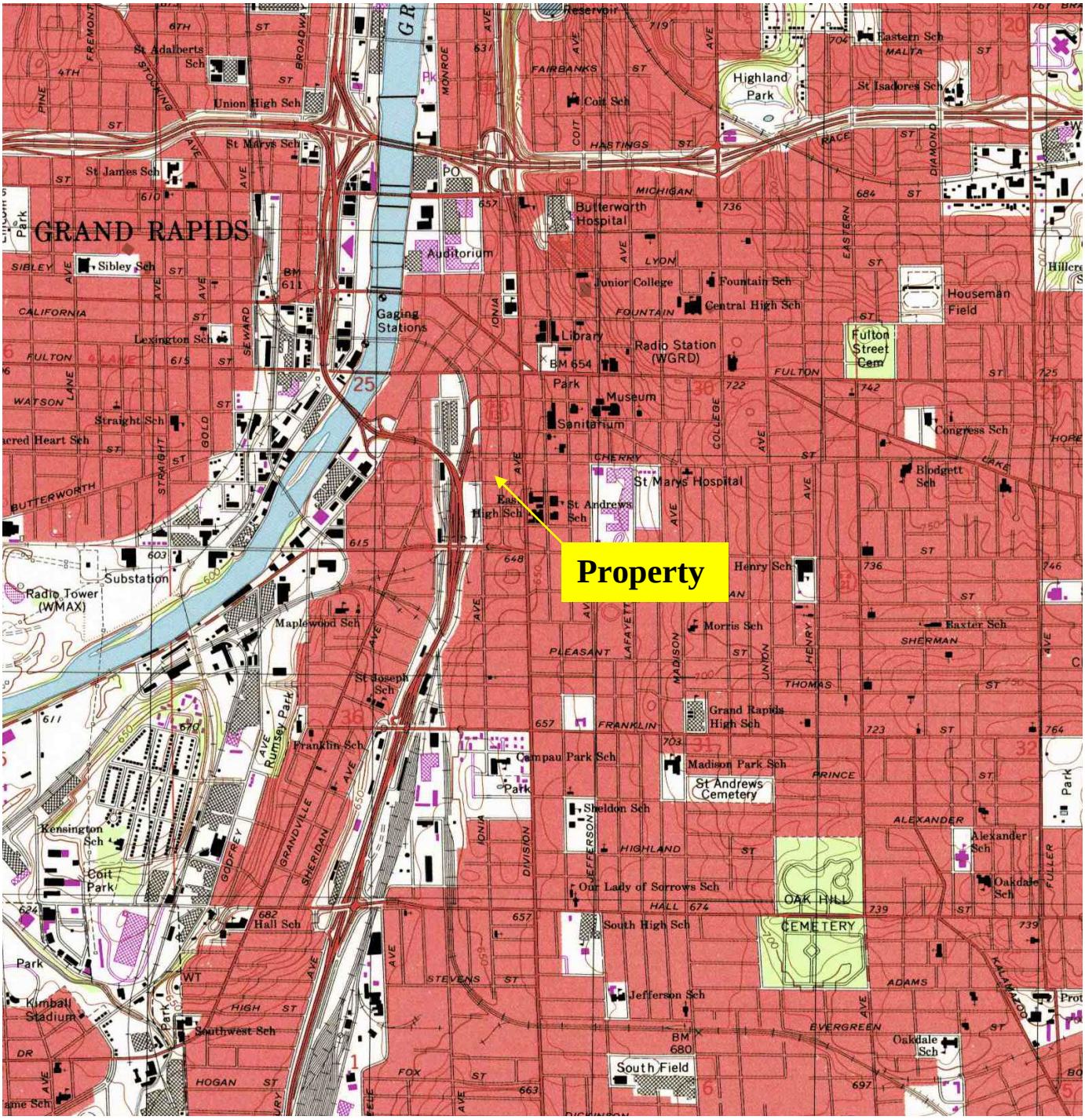
Since groundwater did not return to the UST excavation after the initial corrective actions, no further groundwater verification activities were completed at the site. The remaining groundwater concentrations identified in the IAR outside the UST excavation were below the applicable GRCC. Available perched groundwater data is tabulated and can be found in Appendix E. Figures with the available perched groundwater information can be found in Appendix A. Please note, no water was encountered during the corrective action excavation completed in March 2011.

3.3 Closure Verification for Other Media

No other media was identified as impacted therefore no closure verification activities were completed related to other media.

APPENDIX A

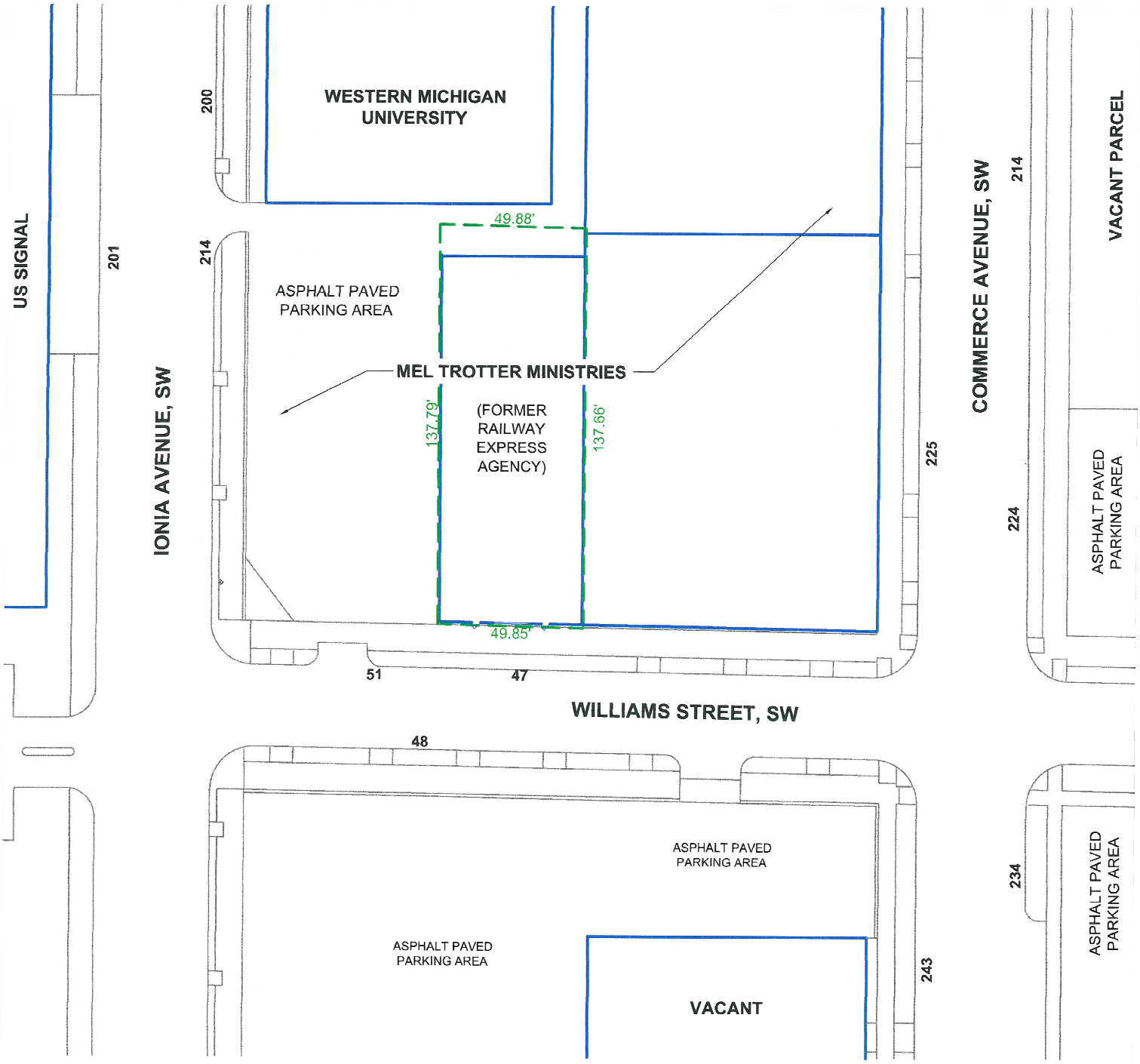
SITE MAPS



N

Source: USGS 1996 Topographic Map

Project No.: 74-090095-14	Project Name: **Former Railway Express Agency Property**	Title: **Property Location Map**
Scale: 1:24000	Project Address: **47 Williams Street SW, Grand Rapids, Michigan**	
Drawn By: SLK Checked By: GRJ	**NTH Consultants, Ltd.** **Infrastructure Engineering and Environmental Services**	Figure No.: 1



LEGEND

PROPERTY BOUNDARY

NOTES:

THIS DIAGRAM IS NOT A LEGAL SURVEY.

NO OFF-SITE WELLS (MUNICIPAL, RESIDENTIAL, PRODUCTION, IRRIGATION, ETC.) ARE LOCATED WITHIN TWO YEARS GROUNDWATER TRAVEL TIME OF THE PROPERTY LINE.

NEAREST DELINEATED WELL-HEAD PROTECTION AREA IS SEVEN MILES NORTHEAST OF THE SUBJECT PROPERTY.

APPROXIMATE SCALE: 1" = 50'

0' 25' 50' 100'

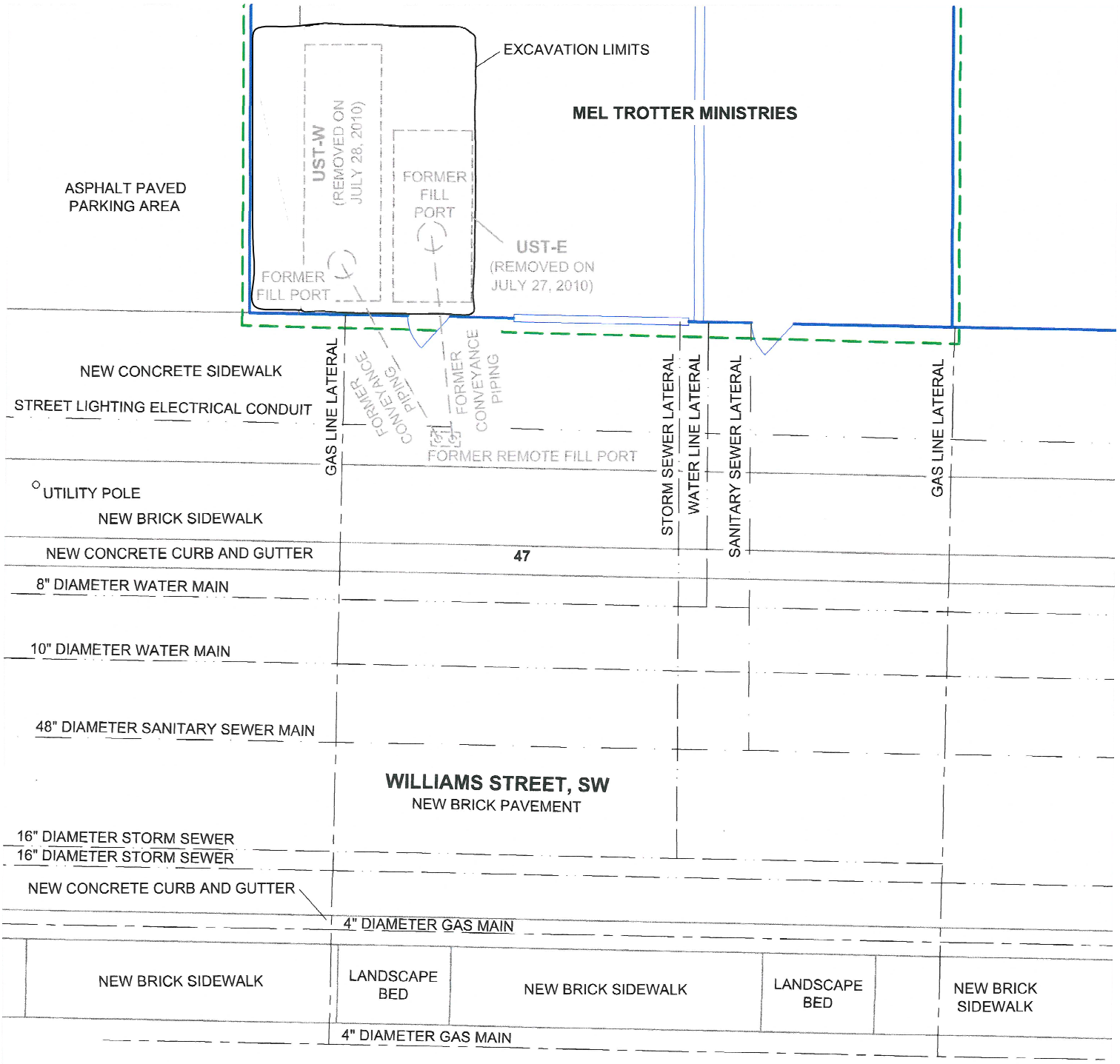
NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

SITE LAYOUT PLAN

FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN

NTH PROJECT No.: 74-090095-14	CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL	PLOT DATE: July 25, 2011
DRAWN BY: AJL	DRAWING SCALE: 1" = 50'
CHECKED BY: GRJ	DATE: July 22, 2011

FIGURE 2



LEGEND

PROPERTY BOUNDARY

NOTES:

THIS DIAGRAM IS NOT A LEGAL SURVEY.

UTILITY LOCATIONS ARE BASED ON SHEET 23 OF 43 TITLED "RECONSTRUCTION OF WILLIAMS STREET FROM IONIA AVE. TO COMMERCE AVE." PROVIDED BY THE CITY OF GRAND RAPIDS PUBLIC WORKS SERVICES ENGINEERING DEPARTMENT.

APPROXIMATE SCALE: 1" = 10'

N

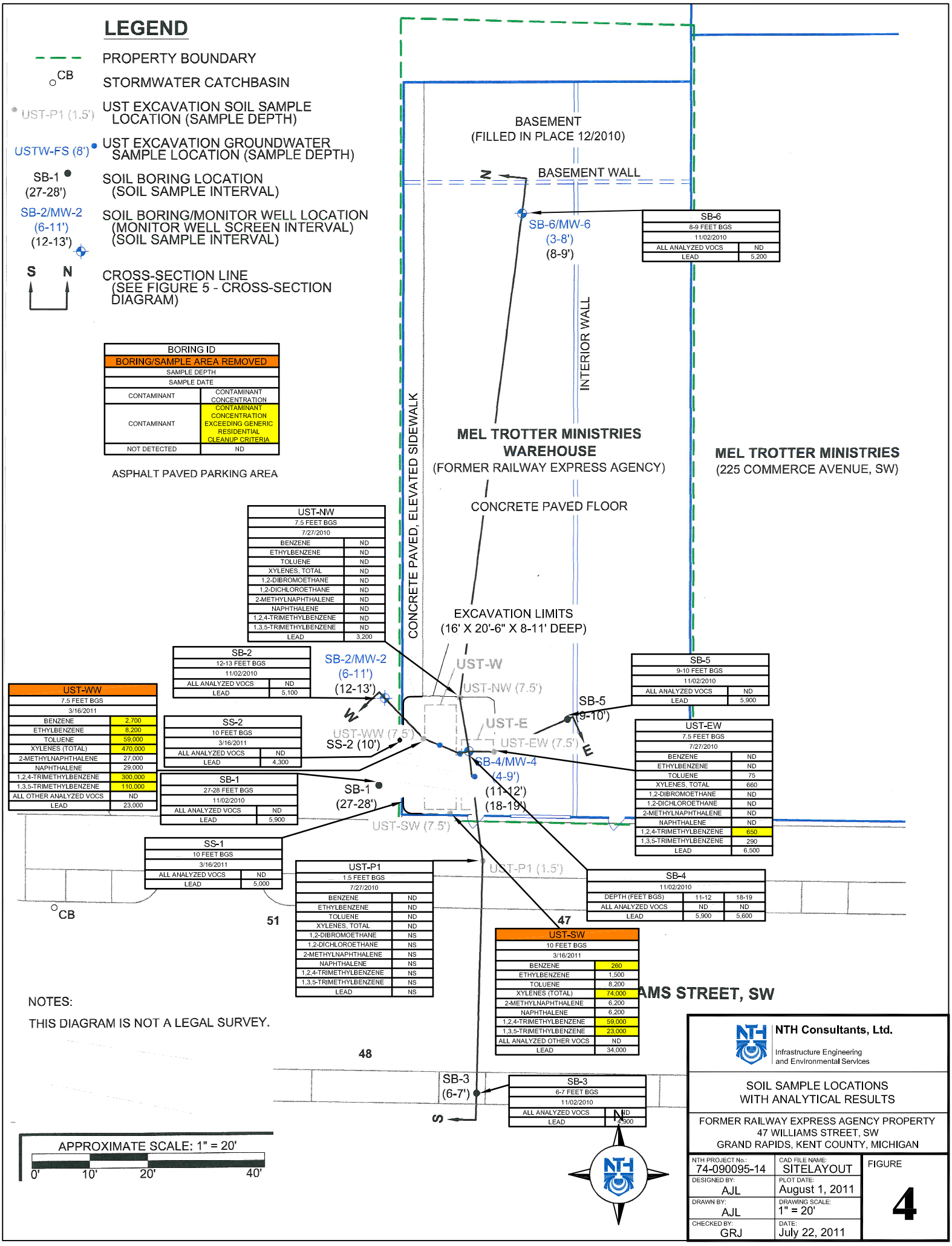
NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

FORMER UST SYSTEM DETAILS / UTILITIES LOCATIONS DIAGRAM

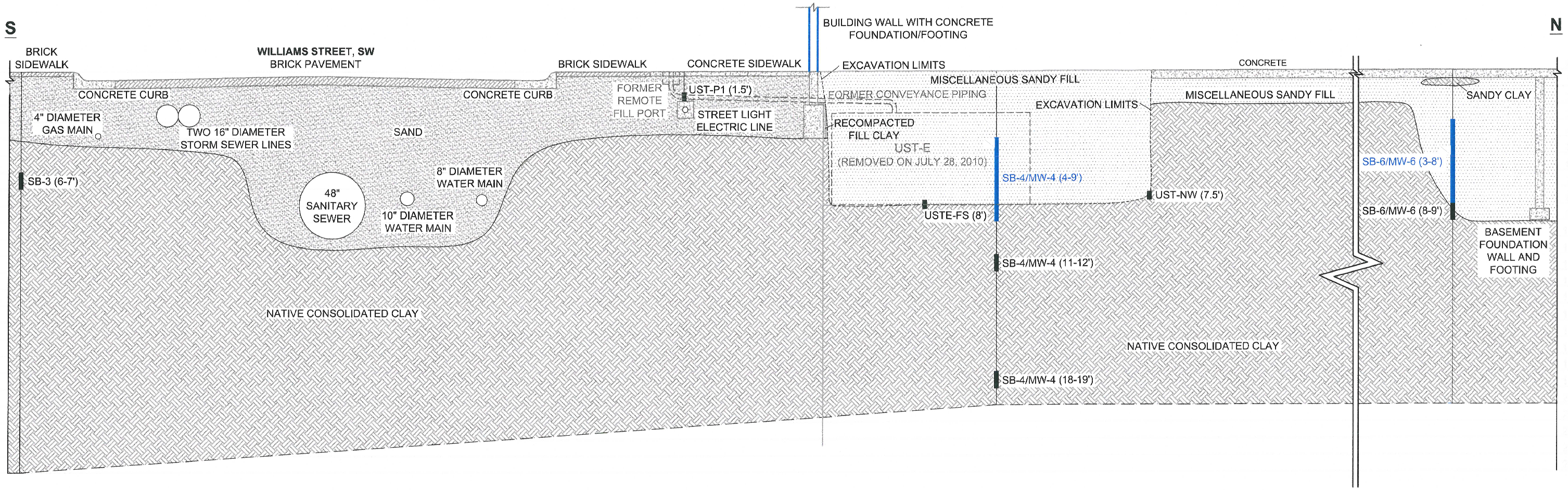
FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN

NTH PROJECT No.: 74-090095-14	CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL	PLOT DATE: August 1, 2011
DRAWN BY: AJL	DRAWING SCALE: 1" = 10'
CHECKED BY: GRJ	DATE: July 22, 2011

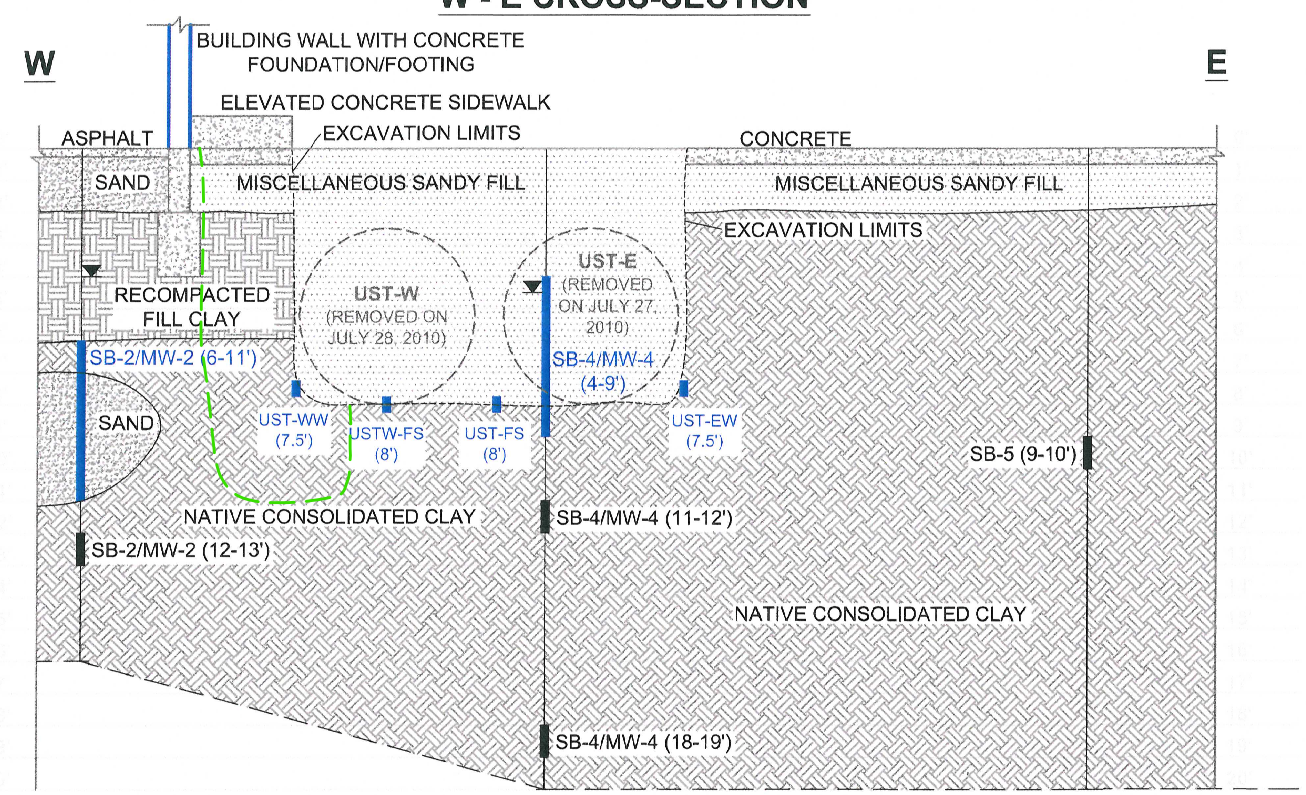
FIGURE 3


LEGEND
PROPERTY BOUNDARY
CB
STORMWATER CATCHBASIN
UST-P1 (1.5')
UST EXCAVATION SOIL SAMPLE LOCATION (SAMPLE DEPTH)
USTW-FS (8')
UST EXCAVATION GROUNDWATER SAMPLE LOCATION (SAMPLE DEPTH)
SB-1 (27-28')
SOIL BORING LOCATION (SOIL SAMPLE INTERVAL)
SB-2/MW-2 (6-11') (12-13')
SOIL BORING/MONITOR WELL LOCATION (MONITOR WELL SCREEN INTERVAL) (SOIL SAMPLE INTERVAL)
S N
CROSS-SECTION LINE (SEE FIGURE 5 - CROSS-SECTION DIAGRAM)
BORING ID
BORING/SAMPLE AREA REMOVED
SAMPLE DEPTH
SAMPLE DATE
CONTAMINANT
CONTAMINANT CONCENTRATION
CONTAMINANT
CONTAMINANT CONCENTRATION EXCEEDING GENERIC RESIDENTIAL CLEANUP CRITERIA
NOT DETECTED
ND
ASPHALT PAVED PARKING AREA
BASEMENT
(FILLED IN PLACE 12/2010)
BASEMENT WALL
INTERIOR WALL
CONCRETE PAVED, ELEVATED SIDEWALK
MEL TROTTER MINISTRIES WAREHOUSE
(FORMER RAILWAY EXPRESS AGENCY)
MEL TROTTER MINISTRIES
(225 COMMERCE AVENUE, SW)
CONCRETE PAVED FLOOR
EXCAVATION LIMITS
(16' X 20'-6" X 8-11' DEEP)
SB-6/MW-6 (3-8') (8-9')
SB-6
8-9 FEET BGS
11/02/2010
ALL ANALYZED VOCS ND
LEAD 5,200
UST-NW
7.5 FEET BGS
7/27/2010
BENZENE ND
ETHYLBENZENE ND
TOLUENE ND
XYLENES, TOTAL ND
1,2-DIBROMOETHANE ND
1,2-DICHLOROETHANE ND
2-METHYLNAPHTHALENE ND
NAPHTHALENE ND
1,2,4-TRIMETHYLBENZENE ND
1,3,5-TRIMETHYLBENZENE ND
LEAD 3,200
SB-2
12-13 FEET BGS
11/02/2010
ALL ANALYZED VOCS ND
LEAD 5,100
SB-2/MW-2 (6-11') (12-13')
UST-W
UST-NW (7.5')
SB-5
9-10 FEET BGS
11/02/2010
ALL ANALYZED VOCS ND
LEAD 5,900
SB-5 (9-10')
UST-WW
7.5 FEET BGS
3/16/2011
BENZENE 2,700
ETHYLBENZENE 8,200
TOLUENE 59,000
XYLENES (TOTAL) 470,000
2-METHYLNAPHTHALENE 27,000
NAPHTHALENE 29,000
1,2,4-TRIMETHYLBENZENE 300,000
1,3,5-TRIMETHYLBENZENE 110,000
ALL OTHER ANALYZED VOCS ND
LEAD 23,000
SS-2
10 FEET BGS
3/16/2011
ALL ANALYZED VOCS ND
LEAD 4,300
UST-WW (7.5')
SS-2 (10')
UST-E
UST-EW (7.5')
UST-EW
7.5 FEET BGS
7/27/2010
BENZENE ND
ETHYLBENZENE ND
TOLUENE 75
XYLENES, TOTAL 660
1,2-DIBROMOETHANE ND
1,2-DICHLOROETHANE ND
2-METHYLNAPHTHALENE ND
NAPHTHALENE ND
1,2,4-TRIMETHYLBENZENE 650
1,3,5-TRIMETHYLBENZENE 290
LEAD 6,500
SB-4/MW-4 (4-9') (11-12') (18-19')
SB-1
27-28 FEET BGS
11/02/2010
ALL ANALYZED VOCS ND
LEAD 5,900
SB-1 (27-28')
UST-SW (7.5')
SS-1
10 FEET BGS
3/16/2011
ALL ANALYZED VOCS ND
LEAD 5,000
UST-P1
1.5 FEET BGS
7/27/2010
BENZENE ND
ETHYLBENZENE ND
TOLUENE ND
XYLENES, TOTAL ND
1,2-DIBROMOETHANE NS
1,2-DICHLOROETHANE NS
2-METHYLNAPHTHALENE NS
NAPHTHALENE NS
1,2,4-TRIMETHYLBENZENE NS
1,3,5-TRIMETHYLBENZENE NS
LEAD NS
UST-P1 (1.5')
SB-4
11/02/2010
DEPTH (FEET BGS) 11-12 18-19
ALL ANALYZED VOCS ND ND
LEAD 5,900 5,600
CB
51
47
UST-SW
10 FEET BGS
3/16/2011
BENZENE 260
ETHYLBENZENE 1,500
TOLUENE 8,200
XYLENES (TOTAL) 74,000
2-METHYLNAPHTHALENE 6,200
NAPHTHALENE 6,200
1,2,4-TRIMETHYLBENZENE 59,000
1,3,5-TRIMETHYLBENZENE 23,000
ALL ANALYZED OTHER VOCS ND
LEAD 34,000
AMS STREET, SW
48
SB-3 (6-7')
SB-3
6-7 FEET BGS
11/02/2010
ALL ANALYZED VOCS ND
LEAD 4,900
S
N
NOTES:
THIS DIAGRAM IS NOT A LEGAL SURVEY.
APPROXIMATE SCALE: 1" = 20'
0' 10' 20' 40'
NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services
SOIL SAMPLE LOCATIONS WITH ANALYTICAL RESULTS
FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN
NTH PROJECT No.: 74-090095-14
CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL
PLOT DATE: August 1, 2011
DRAWN BY: AJL
DRAWING SCALE: 1" = 20'
CHECKED BY: GRJ
DATE: July 22, 2011
FIGURE 4

S - N CROSS-SECTION



W - E CROSS-SECTION



LEGEND

- ADDITIONAL EXCAVATION 3/16/2011
- SB-2/MW-2 (12-13') SOIL SAMPLE INTERVAL
- SB-2/MW-2 (6-11') MONITOR WELL SCREEN INTERVAL

APPROXIMATE SCALE: 1" = 6'

0' 3' 6' 12'

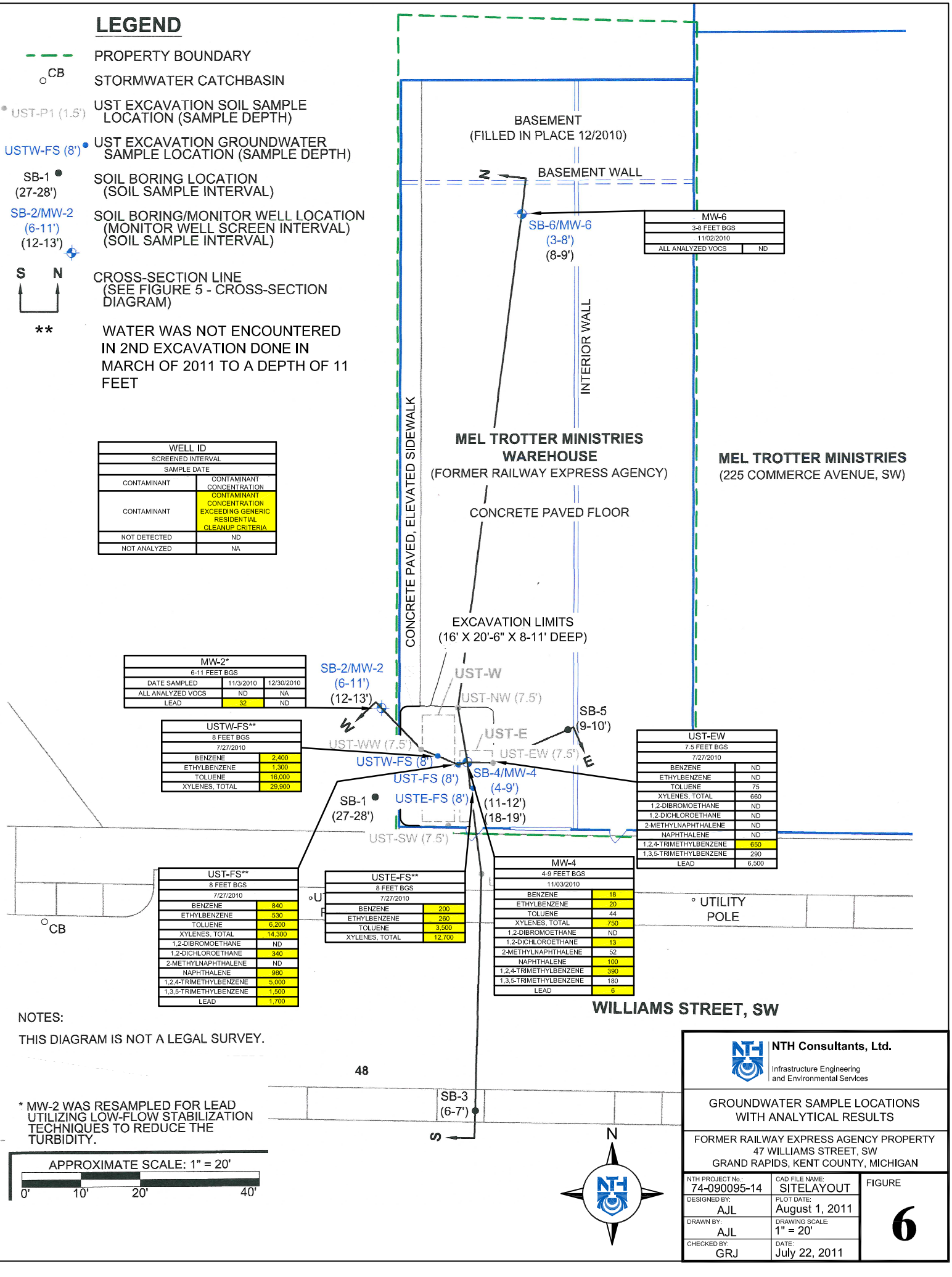
NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

CROSS-SECTIONS

FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN

NTH PROJECT No.: 74-090095-14	CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL	PLOT DATE: August 1, 2011
DRAWN BY: AJL	DRAWING SCALE: 1" = 20'
CHECKED BY: GRJ	DATE: July 22, 2011

FIGURE 5



WELL ID	
SCREENED INTERVAL	
SAMPLE DATE	
CONTAMINANT	CONTAMINANT CONCENTRATION
CONTAMINANT	CONTAMINANT CONCENTRATION EXCEEDING GENERIC RESIDENTIAL CLEANUP CRITERIA
NOT DETECTED	ND
NOT ANALYZED	NA

MW-6	
3-8 FEET BGS	
11/02/2010	
ALL ANALYZED VOCS	ND

MW-2*		
6-11 FEET BGS		
DATE SAMPLED	11/3/2010	12/30/2010
ALL ANALYZED VOCS	ND	NA
LEAD	32	ND

USTW-FS**	
8 FEET BGS	
7/27/2010	
BENZENE	2,400
ETHYLBENZENE	1,300
TOLUENE	16,000
XYLENES, TOTAL	29,900

UST-EW	
7.5 FEET BGS	
7/27/2010	
BENZENE	ND
ETHYLBENZENE	ND
TOLUENE	75
XYLENES, TOTAL	660
1,2-DIBROMOETHANE	ND
1,2-DICHLOROETHANE	ND
2-METHYLNAPHTHALENE	ND
NAPHTHALENE	ND
1,2,4-TRIMETHYLBENZENE	650
1,3,5-TRIMETHYLBENZENE	290
LEAD	6,500

UST-FS**	
8 FEET BGS	
7/27/2010	
BENZENE	840
ETHYLBENZENE	530
TOLUENE	6,200
XYLENES, TOTAL	14,300
1,2-DIBROMOETHANE	ND
1,2-DICHLOROETHANE	340
2-METHYLNAPHTHALENE	ND
NAPHTHALENE	980
1,2,4-TRIMETHYLBENZENE	5,000
1,3,5-TRIMETHYLBENZENE	1,500
LEAD	1,700

USTE-FS**	
8 FEET BGS	
7/27/2010	
BENZENE	200
ETHYLBENZENE	260
TOLUENE	3,500
XYLENES, TOTAL	12,700

MW-4	
4-9 FEET BGS	
11/03/2010	
BENZENE	18
ETHYLBENZENE	20
TOLUENE	44
XYLENES, TOTAL	750
1,2-DIBROMOETHANE	ND
1,2-DICHLOROETHANE	13
2-METHYLNAPHTHALENE	52
NAPHTHALENE	100
1,2,4-TRIMETHYLBENZENE	390
1,3,5-TRIMETHYLBENZENE	180
LEAD	6

NOTES:

THIS DIAGRAM IS NOT A LEGAL SURVEY.

* MW-2 WAS RESAMPLED FOR LEAD UTILIZING LOW-FLOW STABILIZATION TECHNIQUES TO REDUCE THE TURBIDITY.

APPROXIMATE SCALE: 1" = 20'

0' 10' 20' 40'

N

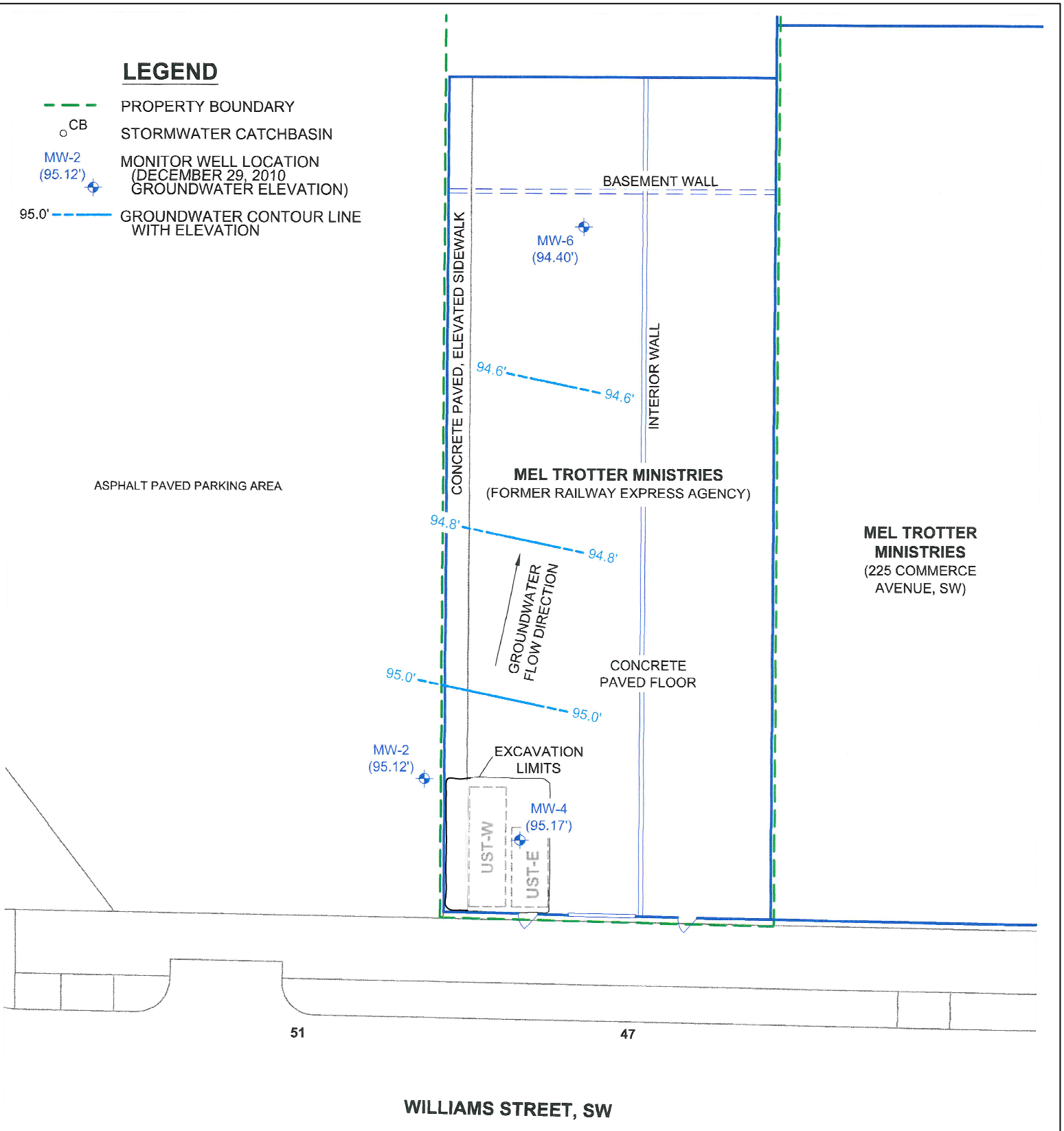
NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

GROUNDWATER SAMPLE LOCATIONS WITH ANALYTICAL RESULTS

FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN

NTH PROJECT No.: 74-090095-14	CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL	PLOT DATE: August 1, 2011
DRAWN BY: AJL	DRAWING SCALE: 1" = 20'
CHECKED BY: GRJ	DATE: July 22, 2011

FIGURE 6



NOTE:

THIS DIAGRAM IS NOT A LEGAL SURVEY.

APPROXIMATE SCALE: 1" = 20'

0' 10' 20' 40'

N

NTH Consultants, Ltd.

Infrastructure Engineering and Environmental Services

POTENTIOMETRIC SURFACE MAP
WITH 12/29/2010 CONTOURS

FORMER RAILWAY EXPRESS AGENCY PROPERTY
47 WILLIAMS STREET, SW
GRAND RAPIDS, KENT COUNTY, MICHIGAN

NTH PROJECT No.: 74-090095-14	CAD FILE NAME: SITELAYOUT
DESIGNED BY: AJL	PLOT DATE: August 1, 2011
DRAWN BY: AJL	DRAWING SCALE: 1" = 20'
CHECKED BY: GRJ	DATE: July 22, 2011

FIGURE 7

APPENDIX B

MANIFEST, LOAD TICKET

REPUBLIC SERVICES, INC.

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of

d. Generator's Name and Location:	e. Generator's Mailing Address:
MEL TROTTER MINISTRIES 47 WILLIAMS GRAND RAPIDS, MI 49503 f. Phone:616-292-5821	SAME g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	 i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4042 11 3458	3/11/12	DIESEL FUEL CONT. SOIL			8	CY

On behalf of.

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Terry A Loomis		3-15-2011

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
JL CONSTRUCTION
03239 COUNTY RD. 653
GOBLES, MI 49055
b. Phone: 269-628-4850

c. Driver Name (Print)	d. Signature	e. Date
Terry L Cook		3-15-2011

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
OTTAWA COUNTY FARMS LANDFILL 15550 68TH ST. COOPERSVILLE, MI 49404 b. Phone: 616-837-8195		

I herby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
		3/15/11

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

OTTAWA COUNTY LANDFILL
15550 68TH AVE
COOPERSVILLE MI

SITE	TICKET	GRID	WEIGHMASTER
Y6	256943		JM00142 JENNIFER M
DATE IN / TIME IN			VEHICLE
15 March 2011 3:47 pm			940
DATE OUT / TIME OUT			ROLL OFF
15 March 2011 3:50 pm			
REFERENCE		ORIGIN	KENT COUNTY

000940
JL COOK
03239 COUNTRY RD 653
GOBLES, MI 49055-8201
Contract: 4042113458

00 Gross Weight	41,820.00	lb	Inbound -
Tare Weight	23,820.00	lb	
Net Weight	18,000.00	lb	9.00 TN

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
9.00	TN	SW-CONT SOIL				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Thank you for choosing Ottawa County Farms Landfill.

SIGNATURE

Re-order this Form from: BFI Print & Promotion Solutions 1-888-254-8784

Attn:
Garnet.

APPENDIX C

SOIL ANALYTICAL REPORTS

TABLE No. 1
Summary of UST Removal & Soil Excavation Analytical Data - Soil Samples
47 Williams Street SW, Grand Rapids, Michigan

SAMPLE ID	UST-P1	UST-NW	UST-EW	UST-SW*	UST-WW*	SS-1	SS-2	SS-2(Dup)	Part 201 Generic Cleanup Criteria (MDEQ Operational Memorandum No. 1, March 25, 2011)									
Sample Depth (Feet Below Grade)	1.5	7.5	7.5	7.5	7.5	10	11	11	**Residential**									
Collected By	Dixon	Dixon	Dixon	Dixon	Dixon	NTH	NTH	NTH										
Collection Date	07/27/10	07/28/10	07/28/10	07/28/10	07/28/10	03/16/11	03/16/11	03/16/11	**Groundwater Protection**			**Indoor Air**	**Ambient Air**				**Direct Contact**	**Csat/Background**
VOC ANALYTICAL METHOD	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	**Drinking Water Protection Criteria**	**Groundwater Surface Water Interface Protection Criteria**	**Groundwater Contact Protection (GCP) Criteria**	**Soil Volatilization to Indoor Air Inhalation (SVIIC) Criteria**	**Infinite Source Volatile Soil Inhalation Criteria (VSIC-Infinite)**	**Finite VSIC for 5 Meter Source Thickness (VSIC-5 Meter)**	**Finite VSIC for 2 Meter Source Thickness (VSIC-2 Meter)**	**Particulate Soil Inhalation Criteria**	**Direct Contact Criteria**	**Soil Saturation (Csat) Screening Levels**
VOCs (ug/kg)	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**										
Benzene	U	U	U	260	2,700	U	U	U	100	4,000	220,000	1,600	13,000	34,000	79,000	380,000,000	180,000	400,000
1,2-dibromoethane	NS	U	U	U	U	U	U	U	500*	500*	500	670	1,700	1,700	3,300	14,000,000	92	890,000
1,2-Dichloroethane	NS	U	U	U	U	U	U	U	100	7,200	380,000	2,100	6,200	11,000	26,000	120,000,000	91,000	1,200,000
Ethylbenzene	U	U	U	1,500	8,200	U	U	U	1,500	360	140,000 (C)	87,000	720,000	1,000,000	2,200,000	10,000,000,000	140,000 (C)	140,000
2-Methylnaphthalene	NS	U	U	6,200	27,000	U	U	U	57,000	ID	5,500,000	ID	ID	ID	ID	ID	8,100,000	NA
Naphthalene	NS	U	U	6,200	29,000	U	U	U	35,000	870	2,100,000	250,000	300,000	300,000	300,000	200,000,000	61,000,000	NA
Toluene	U	U	75	8,200	59,000	U	U	U	16,000	2,800	250,000 (C)	250,000 (C)	2,800,000	5,100,000	12,000,000	27,000,000,000	250,000 (C)	250,000
1,2,4-Trimethylbenzene	NS	U	650	59,000	300,000	U	U	U	2,100	570	110,000 (C)	110,000 (C)	21,000,000	500,000,000	500,000,000	82,000,000,000	110,000 (C)	110,000
1,3,5-Trimethylbenzene	NS	U	290	23,000	110,000	U	U	U	1,800	1,100	94,000 (C)	94,000 (C)	16,000,000	380,000,000	380,000,000	82,000,000,000	94,000 (C)	94,000
Xylenes, Total	U	U	660	74,000	470,000	U	U	U	5,600	700	150,000 (C)	150,000 (C)	46,000,000	61,000,000	130,000,000	290,000,000,000	150,000 (C)	150,000
CONC.	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	1,000	NA	1,000,000,000	NLV	NLV	NLV	NLV	ID	50,000,000	6,900,000
Lead	NS	3,200	6,500	34,000	23,000	5,000	4,300	4,600	700,000	2,500,000	ID	NLV	NLV	NLV	NLV	100,000,000	400,000	NA

Notes:
Only parameters with at least one detection, or a laboratory reporting limit exceeding one or more criteria have been included on this table. Refer to the laboratory data report for a full list of compounds/elements analyzed.
CONC. = Concentration
U = Parameter not detected above the laboratory reporting limit. Refer to the laboratory data report for additional details, including MDL's achieved by the laboratory.
A blank cell indicates that the parameter was not tested for that sample.
A shaded cell indicates that one or more of the criterion have been exceeded.
A bold number indicates the concentration is higher than the criterion and below the Statewide Default therefore, the critierion is not exceeded.
All results reported on dry weight basis

*Soil sample was removed during additional excavation activities in March 2011.

Table Checked By: GRJ

Table No. 2
Summary of Soil Boring and Soil Samples Analytical Data
47 Williams Street SW, Grand Rapids, Michigan

SAMPLE ID	SB-1	SB-2	SB-3	SB-4	SB-4	SB-5	SB-6	Part 201 Generic Cleanup Criteria (MDEQ Operational Memorandum No. 1, March 25, 2011)									
Sample Depth (Feet Below Grade)	27-28	12-13	6-7	11-12	18-19	9-10	8-9	Residential									
Collected By	Dixon	Dixon	Dixon	Dixon	Dixon	Dixon	Dixon										
Collection Date	11/02/10	11/02/10	11/02/10	11/02/10	11/02/10	11/02/10	11/02/10	**Groundwater Protection**			**Indoor Air**	**Ambient Air**				**Direct Contact**	**Csat/Background**
VOC ANALYTICAL METHOD	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B	5035 / 8260B										
VOC EXTRACTION DATE	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010										
VOC ANALYSIS DATE	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010										
VOCs (ug/kg)	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**Drinking Water Protection Criteria**	**Groundwater Surface Water Interface Protection Criteria**	**Groundwater Contact Protection (GCP) Criteria**	**Soil Volatilization to Indoor Air Inhalation (SVIIC) Criteria**	**Infinite Source Volatile Soil Inhalation Criteria (VSIC-Infinite)**	**Finite VSIC for 5 Meter Source Thickness (VSIC-5 Meter)**	**Finite VSIC for 2 Meter Source Thickness (VSIC-2 Meter)**	**Particulate Soil Inhalation Criteria**	**Direct Contact Criteria**	**Soil Saturation (Csat) Screening Levels**
All Analyzed VOCs	U	U	U	U	U	U	U	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various
METAL COLLECTION DATE	11/2/2010	11/2/2010	11/2/2010	11/2/2010	11/2/2010	11/2/2010	11/2/2010										
METAL EXTRACTION DATE	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010	11/5/2010										
METAL ANALYSIS DATE	11/8/2010	11/8/2010	11/8/2010	11/8/2010	11/8/2010	11/8/2010	11/8/2010										
METALS (ug/kg)	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	1,000	NA	1,000,000,000	NLV	NLV	NLV	NLV	ID	50,000,000	6,900,000
Lead, Total	5,900	5,100	4,900	5,900	5,600	5,900	5,200	700,000	2,500,000	ID	NLV	NLV	NLV	NLV	100,000,000	400,000	NA

Notes:
Only parameters with at least one detection, or a laboratory reporting limit exceeding one or more criteria have been included on this table. Refer to the laboratory data report for a full list of compounds/elements analyzed.
CONC. = Concentration
U = Parameter not detected above the laboratory reporting limit. Refer to the laboratory data report for additional details, including MDL's achieved by the laboratory.
A blank cell indicates that the parameter was not tested for that sample.
A shaded cell indicates that one or more of the criterion have been exceeded.
A bold number indicates the concentration is higher than the criterion and below the Statewide Default therefore, the critierion is not exceeded.
All results reported on dry weight basis

Criteria Footnotes
NA = Criteria Not Applicable or Not Available
NLV = Not Likely to Volatilize
NLL = Not Likely to Leach
ID = Insufficient Data to formulate criteria (criteria not available)
(C) = The calculated risk-based criterion is greater than the generic soil saturation (Csat) screening level
(D) = Calculated criteria exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb)
(G) = Criteria is pH and/or water hardness dependent. A hardness value of 265 mg CaCO3/L has been used. Refer to Footnote G in MDEQ Op. Memo. No. 1, Attachment 1, dated June 27, 2005.
(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.
(M) = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit
(X) = GSI criteria is not protective of surface water used as a source of drinking water. Refer to Footnote X in MDEQ Operational Memorandum No. 1, Attachment 1, dated June 27, 2005
Refer to MDEQ Operational Memorandum No. 1, Attachment 1 for additional chemical and criteria information.
Criteria are draft and/or estimated by the MDEQ using surrogate toxicity information.

Table Checked By: GRJ

Client Identification:	**NTH Consultants, Ltd. - Grand Rapids**	Sample Description:	**SS-1 (10')**	Chain of Custody:	**105792**
Client Project Name:	**74-090095-14**	Sample No:	**1**	Collect Date:	**03/16/11**
Client Project No:	**NA**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Dry Weight Determination (ASTM D 2974-87) — **Aliquot ID: 43661-001A** — **Matrix: Soil/Solid** — **Analyst: BMG**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Percent Moisture (Water Content) (NN)	**11**		%	0.1	1.0	03/18/11	MC110318	03/21/11	MC110318

Trace Elements by ICP/MS (EPA 3050B/EPA 6020A) — **Aliquot ID: 43661-001A** — **Matrix: Soil/Solid** — **Analyst: MAP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	**5000**		µg/kg	1000	20	03/22/11	PT11C22D	03/23/11	T211C23A

VOCs - UST - Leaded Gasoline, 5035 (EPA 5035/EPA 8260B) — **Aliquot ID: 43661-001** — **Matrix: Soil/Solid** — **Analyst: JAS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Benzene	**U**		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
2. 1,2-Dichloroethane	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
3. Ethylbenzene	**U**		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
4. Ethylene Dibromide	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
5. 2-Methylnaphthalene (NN)	**U**		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
6. Naphthalene	U		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
7. Toluene	**U**		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
8. 1,2,3-Trimethylbenzene (NN)	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
9. 1,2,4-Trimethylbenzene	**U**		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
10. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
11. Xylenes	**U**		µg/kg	150	1.0	03/17/11	V911C17C	03/18/11	V911C17C

Client Identification:	**NTH Consultants, Ltd. - Grand Rapids**	Sample Description:	**SS-2 (11')**	Chain of Custody:	**105792**
Client Project Name:	**74-090095-14**	Sample No:	**2**	Collect Date:	**03/16/11**
Client Project No:	**NA**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Dry Weight Determination (ASTM D 2974-87) — **Aliquot ID: 43661-002A** — **Matrix: Soil/Solid** — **Analyst: BMG**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Percent Moisture (Water Content) (NN)	**12**		%	0.1	1.0	03/18/11	MC110318	03/21/11	MC110318

Trace Elements by ICP/MS (EPA 3050B/EPA 6020A) — **Aliquot ID: 43661-002A** — **Matrix: Soil/Solid** — **Analyst: MAP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	**4300**		µg/kg	1000	20	03/22/11	PT11C22D	03/23/11	T211C23A

VOCs - UST - Leaded Gasoline, 5035 (EPA 5035/EPA 8260B) — **Aliquot ID: 43661-002** — **Matrix: Soil/Solid** — **Analyst: JAS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Benzene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
2. 1,2-Dichloroethane	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
3. Ethylbenzene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
4. Ethylene Dibromide	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
5. 2-Methylnaphthalene (NN)	U		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
6. Naphthalene	U		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
7. Toluene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
8. 1,2,3-Trimethylbenzene (NN)	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
9. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
10. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
11. Xylenes	U		µg/kg	150	1.0	03/17/11	V911C17C	03/18/11	V911C17C

Client Identification:	**NTH Consultants, Ltd. - Grand Rapids**	Sample Description:	**SS-2 (11') DUP**	Chain of Custody:	**105792**
Client Project Name:	**74-090095-14**	Sample No:	**3**	Collect Date:	**03/16/11**
Client Project No:	**NA**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable NN: Parameter not included in NELAC Scope of Analysis.

Dry Weight Determination (ASTM D 2974-87) — **Aliquot ID: 43661-003A** — **Matrix: Soil/Solid** — **Analyst: BMG**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Percent Moisture (Water Content) (NN)	**12**		%	0.1	1.0	03/18/11	MC110318	03/21/11	MC110318

Trace Elements by ICP/MS (EPA 3050B/EPA 6020A) — **Aliquot ID: 43661-003A** — **Matrix: Soil/Solid** — **Analyst: MAP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Lead	**4600**		µg/kg	1000	20	03/22/11	PT11C22D	03/23/11	T211C23A

VOCs - UST - Leaded Gasoline, 5035 (EPA 5035/EPA 8260B) — **Aliquot ID: 43661-003** — **Matrix: Soil/Solid** — **Analyst: JAS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prep Date	Prep Batch	Analysis Date	Analysis Batch
1. Benzene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
2. 1,2-Dichloroethane	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
3. Ethylbenzene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
4. Ethylene Dibromide	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
5. 2-Methylnaphthalene (NN)	U		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
6. Naphthalene	U		µg/kg	330	1.0	03/17/11	V911C17C	03/18/11	V911C17C
7. Toluene	U		µg/kg	50	1.0	03/17/11	V911C17C	03/18/11	V911C17C
8. 1,2,3-Trimethylbenzene (NN)	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
9. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
10. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	03/17/11	V911C17C	03/18/11	V911C17C
11. Xylenes	U		µg/kg	150	1.0	03/17/11	V911C17C	03/18/11	V911C17C

Definitions/ Qualifiers:

- **A:** Spike recovery or precision unusable due to dilution.
- **B:** The analyte was detected in the associated method blank.
- **E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- **J:** The concentration is an estimated value.
- **M:** Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- **X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- **W:** Results reported on a wet-weight basis.
- ***:** Value reported is outside QA limits

Exception Summary:

ACCREDITED IN ACCORDANCE WITH nelac

Accreditation Number:

E-10395

Fibertec environmental services

Analytical Laboratory
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Holt, MI 48842
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Fax: 517 699 0388
email: lab@fibertec.us

8660 S. Mackinaw Trail
Cadillac, MI 49601
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Industrial Hygiene Services, Inc.
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Holt, MI 48842
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email: asbestos@fibertec.us

Geoprobe
11766 E. Grand River
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
105792
PAGE ___ of ___

Client Name: NTH
Contact Person: Garnet Johnson
Project Name/ Number: 74-090095-14
Purchase Order#

Lab Sample #	Date	Time	Client Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PRESERVED (Y/N)	PARAMETERS: L-Gas Scan	PARAMETERS: Lead
	3-16-11		SS-1	(10')	S	3	Y	X	X
	3-16-11		SS-2	(11')	S	3	Y	X	X
	3-16-11		SS-2	Dup	S	3	Y	X	X

Turnaround
- [ ] 24 hour RUSH (surcharge applies)
- [ ] 48 hour RUSH (surcharge applies)
- [ ] 72 hour RUSH (surcharge applies)
- [X] Standard (5-7 bus. days)
- [ ] Other: Specify

Matrix Code
S Soil | GW Ground Water
W Water | SW Surface Water
A Air | WW Waste Water
O Oil | X Other: Specify
P Wipe

Remarks:

Comments:

Relinquished By:	Date/ Time 3/16/11 15:00	Received By:
Relinquished By:	Date/ Time 3/16/11 16:27	Received By: 16:30
Relinquished By:	Date/ Time	Received By Laboratory:

LAB USE ONLY:
Fibertec project number:
Laboratory Tracking:
Temperature at Receipt:

RCV'D ON ICE 7.5

COC Revision: April 2006

TERMS & CONDITIONS ON BACK

Fibertec environmental services

Quality Control Report
Preparation Batch QC Summary
Volatile Organics by GC/MS
Soil/Solid

Preparation Batch: V911C17C **Preparation Date: 03/17/11**

	Method Blank (MB)			Laboratory Control Sample (LCS)					LCS Duplicate (LCD)				Run Code		
Parameter	Result µg/kg	PQL µg/kg	Q	Result µg/kg	Spike µg/kg	Rec. %	LCL - UCL %	Q	Rec. %	RPD %	UCL %	Q	MB	LCS	LCD
1. Acetone	U	500		7470	5000	149	40 - 207		161	7	20		MB-1	LCS-1	LCD-1
2. Acrylonitrile	U	25.0		6360	5000	127	45 - 180		136	7	20		MB-1	LCS-1	LCD-1
3. Allyl Chloride	U	25.0		4680	5000	94	70 - 130		94	1	20		MB-1	LCS-1	LCD-1
4. Benzene	U	10.0		6150	5000	123	63 - 141		123	0	20		MB-1	LCS-1	LCD-1
5. Bromobenzene	U	10.0		4450	5000	89	70 - 144		88	1	20		MB-1	LCS-1	LCD-1
6. Bromochloromethane	U	25.0		6260	5000	125	42 - 161		127	1	20		MB-1	LCS-1	LCD-1
7. Bromodichloromethane	U	10.0		6060	5000	121	60 - 150		122	0	20		MB-1	LCS-1	LCD-1
8. Bromoform	U	100		4800	5000	96	50 - 117		101	5	20		MB-1	LCS-1	LCD-1
9. Bromomethane	U	100		6000	5000	120	58 - 217		121	1	20		MB-1	LCS-1	LCD-1
10. 2-Butanone	U	250		6060	5000	121	42 - 193		127	5	20		MB-1	LCS-1	LCD-1
11. tert-Butyl Alcohol	U	250		5820	5000	116	42 - 156		127	9	20		MB-1	LCS-1	LCD-1
12. n-Butylbenzene	U	25.0		4990	5000	100	65 - 151		98	2	20		MB-1	LCS-1	LCD-1
13. sec-Butylbenzene	U	10.0		4930	5000	99	68 - 147		95	3	20		MB-1	LCS-1	LCD-1
14. tert-Butylbenzene	U	10.0		4860	5000	97	68 - 140		95	2	20		MB-1	LCS-1	LCD-1
15. Carbon Disulfide	U	10.0		6000	5000	120	36 - 143		117	2	20		MB-1	LCS-1	LCD-1
16. Carbon Tetrachloride	U	25.0		6370	5000	127	50 - 159		126	1	20		MB-1	LCS-1	LCD-1
17. Chlorobenzene	U	10.0		4960	5000	99	72 - 135		97	2	20		MB-1	LCS-1	LCD-1
18. Chloroethane	U	50.0		9310	5000	186	16 - 207		179	4	20		MB-1	LCS-1	LCD-1
19. Chloroform	U	10.0		6970	5000	139	47 - 159		136	2	20		MB-1	LCS-1	LCD-1
20. Chloromethane	U	50.0		7670	5000	153	14 - 185		149	3	20		MB-1	LCS-1	LCD-1
21. 2-Chlorotoluene	U	10.0		4660	5000	93	73 - 141		91	2	20		MB-1	LCS-1	LCD-1
22. 4-Chlorotoluene	U	10.0		5040	5000	101	82 - 137		95	6	20		MB-1	LCS-1	LCD-1
23. Dibromochloromethane	U	25.0		5080	5000	102	59 - 130		103	1	20		MB-1	LCS-1	LCD-1
24. 1,2-Dibromo-3-chloropropane	U	5.00		4560	5000	91	34 - 164		96	5	20		MB-1	LCS-1	LCD-1
25. Dibromomethane	U	10.0		5920	5000	118	66 - 134		122	3	20		MB-1	LCS-1	LCD-1
26. 1,2-Dichlorobenzene	U	10.0		4830	5000	97	76 - 128		95	2	20		MB-1	LCS-1	LCD-1
27. 1,3-Dichlorobenzene	U	10.0		4520	5000	90	72 - 136		90	1	20		MB-1	LCS-1	LCD-1
28. 1,4-Dichlorobenzene	U	10.0		4400	5000	88	74 - 127		87	1	20		MB-1	LCS-1	LCD-1
29. trans-1,4-Dichloro-2-butene	U	25.0		4080	5000	82	56 - 153		83	2	20		MB-1	LCS-1	LCD-1
30. Dichlorodifluoromethane	U	25.0		9060	5000	181	10 - 207		179	1	20		MB-1	LCS-1	LCD-1
31. 1,1-Dichloroethane	U	10.0		7300	5000	146	42 - 157		143	2	20		MB-1	LCS-1	LCD-1
32. 1,2-Dichloroethane	U	20.0		12600	10000	126	56 - 146		130	3	20		MB-1	LCS-1	LCD-1
33. 1,1-Dichloroethene	U	25.0		7380	5000	148	34 - 165		142	4	20		MB-1	LCS-1	LCD-1
34. cis-1,2-Dichloroethene	U	50.0		7140	5000	143	43 - 170		140	2	20		MB-1	LCS-1	LCD-1
35. trans-1,2-Dichloroethene	U	25.0		7140	5000	143	49 - 162		140	2	20		MB-1	LCS-1	LCD-1
36. 1,2-Dichloropropane	U	25.0		6360	5000	127	62 - 151		127	0	20		MB-1	LCS-1	LCD-1
37. 1,3-Dichloropropane	U	10.0		5270	5000	105	77 - 132		107	1	20		MB-1	LCS-1	LCD-1
38. 2,2-Dichloropropane	U	10.0		6680	5000	134	52 - 169		124	7	20		MB-1	LCS-1	LCD-1
39. 1,1-Dichloropropene	U	10.0		7360	5000	147	52 - 153		144	2	20		MB-1	LCS-1	LCD-1
40. cis-1,3-Dichloropropene	U	10.0		5950	5000	119	45 - 156		119	0	20		MB-1	LCS-1	LCD-1
41. trans-1,3-Dichloropropene	U	10.0		5950	5000	119	40 - 157		120	1	20		MB-1	LCS-1	LCD-1
42. Diethyl Ether	U	50.0		9050	5000	181	30 - 167	*	177	2	20		MB-1	LCS-1	LCD-1
43. Ethyl Methacrylate	U	50.0		5240	5000	105	80 - 132		104	1	20		MB-1	LCS-1	LCD-1
44. Ethylbenzene	U	10.0		5030	5000	101	76 - 137		99	1	20		MB-1	LCS-1	LCD-1
45. Ethylene Dibromide	10.6	10.0	*	10400	10000	104	71 - 133		106	2	20		MB-1	LCS-1	LCD-1
46. Hexachlorobutadiene	U	100		4790	5000	96	79 - 142		92	4	20		MB-1	LCS-1	LCD-1
47. Hexachloroethane	U	50.0		4890	5000	98	42 - 151		97	0	20		MB-1	LCS-1	LCD-1
48. 2-Hexanone	U	50.0		4510	5000	90	29 - 211		98	8	20		MB-1	LCS-1	LCD-1
49. Isopropylbenzene	U	10.0		5060	5000	101	68 - 153		100	2	20		MB-1	LCS-1	LCD-1
50. p-Isopropyltoluene	U	10.0		4900	5000	98	75 - 139		95	3	20		MB-1	LCS-1	LCD-1
51. Methacrylonitrile	U	50.0		6560	5000	131	70 - 130	*	137	5	20		MB-1	LCS-1	LCD-1
52. Methyl Iodide	U	50.0		5060	5000	101	17 - 150		104	3	20		MB-1	LCS-1	LCD-1

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Fibertec environmental services

Quality Control Report
Preparation Batch QC Summary
Volatile Organics by GC/MS
Soil/Solid

Batch ID: V911C17C
Page: 2 of 2
Date: 03/18/11

Preparation Batch: V911C17C **Preparation Date: 03/17/11**

Parameter	Method Blank (MB) Result µg/kg	PQL µg/kg	Q	Laboratory Control Sample (LCS) Result µg/kg	Spike µg/kg	Rec. %	LCL - UCL %	Q	LCS Duplicate (LCD) Rec. %	RPD %	UCL %	Q	Run Code MB	LCS	LCD
53. Methyl Methacrylate	U	50.0		5250	5000	105	70 - 130		111	6	20		MB-1	LCS-1	LCD-1
54. Methylene Chloride	U	25.0		7260	5000	145	38 - 180		144	1	20		MB-1	LCS-1	LCD-1
55. 2-Methylnaphthalene	140	25.0	*	4070	5000	81	42 - 202		84	3	20		MB-1	LCS-1	LCD-1
56. 4-Methyl-2-pentanone	U	50.0		5760	5000	115	55 - 161		126	9	20		MB-1	LCS-1	LCD-1
57. MTBE	U	20.0		13900	10000	139	58 - 147		143	3	20		MB-1	LCS-1	LCD-1
58. Naphthalene	25.5	25.0	*	4380	5000	88	45 - 180		91	4	20		MB-1	LCS-1	LCD-1
59. Propionitrile	U	100		6960	5000	139	70 - 130	*	140	1	20		MB-1	LCS-1	LCD-1
60. n-Propylbenzene	U	10.0		4800	5000	96	71 - 146		94	2	20		MB-1	LCS-1	LCD-1
61. Styrene	U	10.0		5040	5000	101	72 - 138		99	1	20		MB-1	LCS-1	LCD-1
62. 1,1,1,2-Tetrachloroethane	U	25.0		5120	5000	102	61 - 131		101	2	20		MB-1	LCS-1	LCD-1
63. 1,1,2,2-Tetrachloroethane	U	25.0		4570	5000	91	72 - 145		95	4	20		MB-1	LCS-1	LCD-1
64. Tetrachloroethene	U	10.0		4950	5000	99	50 - 151		97	2	20		MB-1	LCS-1	LCD-1
65. Tetrahydrofuran	U	100		6690	5000	134	28 - 169		138	3	20		MB-1	LCS-1	LCD-1
66. Toluene	U	10.0		5980	5000	120	65 - 144		119	1	20		MB-1	LCS-1	LCD-1
67. 1,2,3-Trichlorobenzene	29.7	25.0	*	4480	5000	90	50 - 161		90	1	20		MB-1	LCS-1	LCD-1
68. 1,2,4-Trichlorobenzene	16.4	10.0	*	4360	5000	87	54 - 152		87	0	20		MB-1	LCS-1	LCD-1
69. 1,1,1-Trichloroethane	U	10.0		7180	5000	144	46 - 156		140	3	20		MB-1	LCS-1	LCD-1
70. 1,1,2-Trichloroethane	U	25.0		4660	5000	93	80 - 129		95	2	20		MB-1	LCS-1	LCD-1
71. Trichloroethene	U	10.0		6190	5000	124	65 - 144		123	1	20		MB-1	LCS-1	LCD-1
72. Trichlorofluoromethane	U	25.0		9270	5000	185	31 - 226		177	4	20		MB-1	LCS-1	LCD-1
73. 1,2,3-Trichloropropane	U	25.0		4680	5000	94	74 - 139		97	3	20		MB-1	LCS-1	LCD-1
74. 1,1,2-Trichloro-1,2,2-trifluoroethane	U	25.0		6250	5000	125	52 - 156		124	1	20		MB-1	LCS-1	LCD-1
75. 1,2,3-Trimethylbenzene	U	10.0		4650	5000	93	77 - 133		91	3	20		MB-1	LCS-1	LCD-1
76. 1,2,4-Trimethylbenzene	U	10.0		4710	5000	94	71 - 139		93	1	20		MB-1	LCS-1	LCD-1
77. 1,3,5-Trimethylbenzene	U	10.0		4750	5000	95	71 - 138		93	3	20		MB-1	LCS-1	LCD-1
78. Vinyl Chloride	U	25.0		8130	5000	163	25 - 189		160	1	20		MB-1	LCS-1	LCD-1
79. m&p-Xylene	U	20.0		9930	10000	99	69 - 134		97	2	20		MB-1	LCS-1	LCD-1
80. o-Xylene	U	10.0		4920	5000	98	69 - 134		98	1	20		MB-1	LCS-1	LCD-1

Definitions/ Qualifiers:

U: The analyte was not detected at or above the PQL.
***:** Value reported is outside QC limits

Run Code (Analysis Sequence/Run Time):

MB-1	V911C17C	03/17/11 22:40
LCS-1	V911C17C	03/17/11 21:16
LCD-1	V911C17C	03/17/11 21:44

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

Joanna Wieland

Joanna Wieland
Chemist, Volatile Organics
Friday, March 18, 2011
12:50:00 PM

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Fibertec environmental services

Quality Control Report
Preparation Batch QC Summary
Trace Elements by ICP/MS
Soil/Solid

Batch ID: PT11C22
Page: 1 of 1
Date: 03/29/11

Preparation Batch: PT11C22D **Preparation Date: 03/22/11**

	Method Blank (MB)			Laboratory Control Sample (LCS)					LCS Duplicate (LCD)				Run Code		
Parameter	Result µg/kg	PQL µg/kg	Q	Result µg/kg	Spike µg/kg	Rec. %	LCL - UCL %	Q	Rec. %	RPD %	UCL %	Q	MB	LCS	LCD
1. Aluminum	1320	1000	*	54100	50000	108	85 - 115						MB-2	LCS-2	
2. Arsenic	33.7	20.0	*	10000	10000	100	85 - 115						MB-2	LCS-2	
3. Barium	U	1000		52000	50000	104	85 - 115						MB-2	LCS-2	
4. Beryllium	U	32.7		10400	10000	104	85 - 115						MB-2	LCS-2	
5. Boron	U	1000		9760	10000	98	85 - 115						MB-2	LCS-2	
6. Cadmium	U	20.0		10300	10000	103	85 - 115						MB-2	LCS-2	
7. Cobalt	U	20.0		10600	10000	106	85 - 115						MB-2	LCS-2	
8. Lead	U	40.0		21500	20000	107	85 - 115						MB-2	LCS-2	
9. Lithium	U	200		10800	10000	108	85 - 115						MB-2	LCS-2	
10. Manganese	U	1000		52000	50000	104	85 - 115						MB-2	LCS-2	
11. Selenium	U	200		9430	10000	94	85 - 115						MB-2	LCS-2	
12. Silver	U	20.0		11400	10000	114	85 - 115						MB-2	LCS-2	
13. Strontium	U	69.9		10300	10000	103	85 - 115						MB-2	LCS-2	
14. Thallium	U	20.0		10600	10000	106	85 - 115						MB-2	LCS-2	
15. Tin	411	304	*	10700	10000	107	85 - 115						MB-2	LCS-2	
16. Titanium	U	400		10300	10000	103	85 - 115						MB-2	LCS-2	
17. Zinc	U	1000		50900	50000	102	85 - 115						MB-2	LCS-2	

Definitions/ Qualifiers:

U: The analyte was not detected at or above the PQL.
*: Value reported is outside QC limits

Run Code (Analysis Sequence/Run Time):

MB-2	T211C23A	03/23/11 11:41
LCS-2	T211C23A	03/23/11 11:43

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

Q Haney

Jeri Haney
Group Leader, Trace Metals
Tuesday, March 29, 2011
2:26:06 PM

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APPENDIX D

SOIL TABLE

Table 3
MAXIMUM CONCENTRATIONS OF REMAINING CONTAMINANTS IN SOIL
Former Railway Express Agency (Facility # 4271)
47 Williams Street SW, Grand Rapids, Michigan

COMPOUND	Chemical Abstract Service Number (CAS#)	Maximum Concentration	Sample Location	Depth in feet (bgs)	Residential Drinking Water Protection Criteria (DWP)	Residential Groundwater Surface Water Interface Protection Criteria (GSIP)	Residential Soil Volatilization to Indoor Air Inhalation Criteria (SVIIC)	Residential Soil Volatilization to Ambient Air Infinite Source Inhalation Criteria (VSIC)	Direct Contact Criteria (DCC)
VOLATILE ORGANIC COMPOUNDS (VOCs)									
Benzene	71432	U	-	-	100	4,000	8,400	45,000	400,000
Toluene	108883	75	UST-EW	7.5	16,000	5,400	250,000	3,300,000	250,000
Ethyl-benzene	100414	U	-	-	1,500	360	140,000	2,400,000	140,000
Total Xylenes	1330207	660	UST-EW	7.5	5,600	820	150,000	54,000,000	150,000
MTBE	1634044	U	-	-	800	140,000	5,900,000	30,000,000	5,900,000
1,2,4-Trimethylbenzene	95636	650	UST-EW	7.5	2,100	570	110,000	25,000,000	110,000
1,3,5-Trimethylbenzene	108678	290	UST-EW	7.5	1,800	1,100	94,000	19,000,000	94,000
1,2- Dibromoethane	106934	U	-	-	20; 1.0	110	3,600	5,800	430
1,2- Dichloroethane	107062	U	-	-	100	7,200	11,000	21,000	420,000
2 -Methylnaphthalene	91576	U	-	-	57,000	4,200	ID	ID	26,000,000
Naphthalene	91203	U	-	-	35,000	730	470,000	350,000	52,000,000

NOTES:

1. Presented in ug/kg (ppb)
2. Based on MDEQ Part 213 Tier 1 Risk-Based Screening Levels (RBSLs), March 25, 2011
3. U = Not Detected
4. Highlighted = Above RBSLs

APPENDIX E

GROUNDWATER ANALYTICAL REPORTS

TABLE No. 4
Summary of Groundwater Analytical Data
47 Williams Street SW, Grand Rapids, Michigan

SAMPLE ID	UST-E-FS*	UST-W-FS*	UST-FS*	MW-2	MW-2	MW-4*	MW-6	Part 201 **Target Detection Limits** (Operational Memo. #2, 10/22/2004)	Part 201 Generic Cleanup Criteria (MDEQ Operational Memorandum No. 1, March 25, 2011)						
									Residential		Non-Residential		Residential		
Sample Depth (Feet Below Grade)	8.0	8.0	8.0	6--11	6--11	4--9	3--8								
Collection Date / Collected By	7/28/2010 Dixon	7/28/2010 Dixon	7/28/2010 Dixon	11/3/2010 Dixon	12/30/2010 Dixon	11/3/2010 Dixon	12/30/2010 Dixon		Drinking Water Criteria (DWC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Non-Residential (DWC)	Non-Residential (GVIIC)	Groundwater Surface Water Interface Criteria (GSI)	Groundwater Contact Criteria (GCC)	Flammability and Explosivity Screening Level (FESL)	Acute Inhalation Screening Level (AISL)
VOC ANALYTICAL METHOD	5030B/8260B	5030B/8260B	5030B/8260B	5030B/8260B	-	5030B/8260B	5030B/8260B								
VOC EXTRACTION DATE	-	-	-	-	-	-	-								
VOC ANALYSIS DATE	7/29/2010	7/29/2010	8/6/2010	11/8/2010	-	11/3/2010	12/31/2010								
VOCs (ug/L)	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**								
Benzene (I)	200	2,400	840	U	NS	18	U	1	5.0 (A)	5,600	5.0 (A)	35,000	200 (X)	11,000	68,000	67,000
1,2-Dibromoethane	NS	NS	U	U	NS	U	U	5.00	0.05 (A)	2,400	0.05 (A)	15,000	0.2 (X)	25	ID	ID
1,2-Dichloroethane (I)	NS	NS	340	U	NS	13	U	1	5.0 (A)	9,600	5.0 (A)	59,000	**360 (X)**	19,000	2,500,000	ID
Ethylbenzene (I)	260	1,300	530	U	NS	20	U	1	74 (E)	110,000	74 (E)	170,000 (S)	**18**	170,000 (S)	43,000	170,000 (S)
2-Methylnaphthalene	NS	NS	U	U	NS	52	U	5	260	ID	750	ID	ID	25,000 (S)	ID	ID
Naphthalene	NS	NS	980	U	NS	100	U	5	520	31,000 (S)	1,500	31,000 (S)	13	31,000 (S)	NA	31,000 (S)
Toluene (I)	3,500	16,000	6,200	U	NS	44	U	1	790 (E)	530,000 (S)	790 (E)	530,000 (S)	**140**	530,000 (S)	61,000	ID
1,2,4-Trimethylbenzene (I)	NS	NS	5,000	U	NS	390	U	1	63 (E)	56,000 (S)	63 (E)	56,000 (S)	**17**	56,000 (S)	56,000 (S)	ID
1,3,5-Trimethylbenzene (I)	NS	NS	1,500	U	NS	180	U	1	72 (E)	61,000 (S)	72 (E)	61,000 (S)	45	61,000 (S)	ID	ID
Xylenes (I)	12,700	29,900	14,300	U	NS	750	U	3	280 (E)	190,000 (S)	280 (E)	190,000 (S)	**35**	190,000 (S)	70,000	190,000 (S)
ANALYTICAL METHOD	Various	NS	NS	NS	NS	NS	NS									
METALS EXTRACTION DATE	6/6/2011	NS	8/10/2010	11/9/2010	1/1/2011	11/9/2010	-									
METALS ANALYSIS DATE	6/6/2011	NS	8/11/2010	11/11/2010	1/4/2011	11/11/2010	-									
METALS (ug/L)	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**CONC.**	**TDL's**	**DWC**	**GVIIC**	**Non-Residential (DWC)**	**Non-Residential (GVIIC)**	**GSI**	**GCC**	**FESL**	**AISL**
Lead	NS	NS	1,700	32	U	6	NS	3	4.0 (L)	NLV	4.0 (L)	NLV	10.0 (G,X)	ID	ID	ID

CONC. = Concentration

U = Parameter not detected above the laboratory reporting limit. Refer to the laboratory data report for additional details, including MDL's achieved by the laboratory.

*Water was not encountered in second excavation done in March 2011 to a depth of approximately 11 feet. This previously impacted water was removed during UST removal and excavation activities.

(D) = Calculated criteria exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb)

(G) = Criteria is pH and/or water hardness dependent. A hardness value of 100 mg CaCO3/L has been used. Refer to Footnote G in MDEQ Op. Memo. No. 1, Attachment 1, dated June 27, 2005.

(L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.
(M) = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit
(S) = Criterion defaults to the hazardous substance-specific water solubility limit
(X) = GSI criteria is not protective of surface water used as a source of drinking water. Refer to Footnote X in MDEQ Operational Memorandum No. 1, Attachment 1, dated June 27, 2005
Refer to MDEQ Operational Memorandum No. 1, Attachment 1 for additional chemical and criteria information.

Checked By: GRJ